



SUPRA SERVER PDM

Directory Batch User's Guide
(OS/390 & VSE)

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SUPRA® Server PDM Directory Batch User's Guide (OS/390 & VSE)

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Release information for this manual

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We welcome your comments

We encourage critiques concerning the technical content and organization of this manual. Please take the [survey](#) provided with the online documentation at your convenience.

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About this book

Using this document

This manual describes how to update the Directory using the Batch Directory Maintenance facility. The manual is written for the database administrator, who should be familiar with database and Directory concepts.

This manual and the *SUPRA Server PDM Directory Online User's Guide (OS/390 & VSE)*, P26-1260, provide reference information for Directory Maintenance. These manuals parallel each other as closely as possible and explain how to use the Directory Maintenance facilities. The *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250, describes the categories the Directory maintains and provides tutorial information, such as how to expand the Directory and how to add a File. These manuals are designed to be used in conjunction with one another, and you should be familiar with the introductory material in each of them before proceeding.

The new information in this manual includes added fields for HDMP support. The REORGANIZE File Utility has been added to reorganize an existing Secondary Key structure. Also, if you set the new SK maintenance field to Y, many commands are not allowed. The Navigation Primitive category on the Directory has been removed.

Document organization

The information in this manual is organized as follows:

Chapter 1—Using the Batch Directory Maintenance facility

Introduces the Batch Directory Maintenance facility, including hierarchy of directory categories, naming conventions, and a list of commands.

Chapter 2—Using Run option definition statements

Presents the Run option definition statements in alphabetical order.

Chapter 3—Maintaining Conceptual Schema data

Presents the Directory Maintenance input statements used to maintain the Conceptual Schema data.

Chapter 4—Maintaining External Schema data

Presents the Directory Maintenance input statements used to maintain the External Schema data.

Chapter 5—Maintaining Internal Schema data

Presents the Directory Maintenance input statements used to maintain the Internal Schema data.

Chapter 6—Maintaining System data

Presents the Directory Maintenance input statements used to maintain the System data.

Chapter 7—Maintaining User data

Presents the Directory Maintenance input statements used to maintain the User data.

Chapter 8—Using the common commands

Presents those commands that use common input statements regardless of the category you are maintaining.

Appendix A—Command statement layouts

Shows the field layouts for each command statement, presented alphabetically.

Appendix B—Unit field values

Presents valid unit options for an Attribute, a Domain, an External Field or a Physical Field.

Appendix C—Supplied default values

Presents supplied default values for each category in alphabetical sequence.

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Revisions to this manual

The following changes have been made for this release:

- ◆ Changed the description for “signed option” on page 101 and changed information in 3rd and 4th considerations.
- ◆ Changed the description under “signed option” on page 189 to add “and SQL applications”. Changed information in the 4th and 5th considerations. Same changes apply to “signed option” on page 355 and “signed option” on page 369.
- ◆ Added 2 considerations to “physical field” on page 204.
- ◆ A consideration has been added to the access method parameter, which starts on page 275.
- ◆ Added information to the first General consideration under “Physical Field” on page 345.
- ◆ Added a consideration to “physical field” on page 350, “physical field” on page 365, and “physical field” on page 377.
- ◆ Added a consideration to “primary secondary key indicator” on page 412.
- ◆ The NORMAL product is no longer distributed. If you use NORMAL, retain your files and previous documentation. References to NORMAL in this document have been deleted.

Conventions

The following table describes the conventions used in this document series:

Convention	Description	Example
Constant width type	Represents screen images and segments of code.	<pre>PUT 'customer.dat' GET 'miller\customer.dat' PUT '\DEV\RMT0'</pre>
Slashed b (<i>b</i>)	Indicates a space (blank). The example indicates that four spaces appear between the keywords.	<pre>BEGIN 4000 SERIAL</pre>
Brackets []	Indicate optional selection of parameters. (Do not attempt to enter brackets or to stack parameters.) Brackets indicate one of the following situations:	
	A single item enclosed by brackets indicates that the item is optional and can be omitted. The example indicates that you can optionally enter a WHERE clause.	<pre>[WHERE <i>search-condition</i>]</pre>
	Stacked items enclosed by brackets represent optional alternatives, one of which can be selected. The example indicates that you can optionally enter either WAIT or NOWAIT. (WAIT is underlined to signify that it is the default.)	<pre>[<u>(WAIT)</u> (NOWAIT)]</pre>

Convention	Description	Example
Braces { }	<p>Indicate selection of parameters. (Do not attempt to enter braces or to stack parameters.) Braces surrounding stacked items represent alternatives, one of which you must select.</p> <p>The example indicates that you must enter ON or OFF when using the MONITOR statement.</p>	<pre>MONITOR {ON OFF}</pre>
<u>Underlining</u> (In syntax)	<p>Indicates the default value supplied when you omit a parameter.</p> <p>The example indicates that if you do not choose a parameter, the system defaults to WAIT.</p>	<pre>[(WAIT) (NOWAIT)]</pre>
	<p>Underlining also indicates an allowable abbreviation or the shortest truncation allowed.</p> <p>The example indicates that you can enter either STAT or STATISTICS.</p>	<pre><u>STATISTICS</u></pre>
Ellipsis points...	<p>Indicate that the preceding item can be repeated.</p> <p>The example indicates that you can enter multiple host variables and associated indicator variables.</p>	<pre>INTO :host-variable [:ind- variable],...</pre>

Convention	Description	Example
UPPERCASE lowercase	In most operating environments, keywords are not case-sensitive, and they are represented in uppercase. You can enter them in either uppercase or lowercase.	COPY MY_DATA.SEQ HOLD_DATA.SEQ
<i>Italics</i>	Indicate variables you replace with a value, a column name, a file name, and so on. The example indicates that you must substitute the name of a table.	FROM <i>table-name</i>
Punctuation marks	Indicate required syntax that you must code exactly as presented. () parentheses . period , comma : colon ' ' single quotation marks	(<i>user-id</i> , <i>password</i> , <i>db-name</i>) INFILE 'Cust.Memo' CONTROL LEN4
SMALL CAPS	Represent a required keystroke. Multiple keystrokes are hyphenated.	ALT-TAB
<div>OS/390</div> <div>VSE</div>	Information specific to a certain operating system is flagged by a symbol in a shadowed box (OS/390) indicating which operating system is being discussed. Skip any information that does not pertain to your environment.	<div>OS/390 See the SUPRA Server procedure library member TIS\$RDM for a list of RDM procedures.</div> <div>VSE See the SUPRA Server RDM sublibrary member TXJ\$INDX for a list of JCL.</div>

SUPRA Server documentation series

SUPRA Server is the advanced relational database management system for high-volume, update-oriented production processing. A number of tools are available with SUPRA Server including Directory Maintenance, DBA utilities, DBAID, SPECTRA, and MANTIS. The following list shows the manuals and tools used to fulfill the data management and retrieval requirements for various tasks. Some of these tools are optional. Therefore, you may not have all the manuals listed. For a brief synopsis of each manual, refer to the *SUPRA Server Digest (OS/390 & VSE)*, P26-9062.

Overview

- ◆ *SUPRA Server Digest (OS/390 & VSE)*, P26-9062

Getting started

- ◆ *SUPRA Server PDM Migration Guide (OS/390 & VSE)*, P26-0550*
- ◆ *SUPRA Server PDM CICS Connector Systems Programming Guide (OS/390 & VSE)*, P26-7452

General use

- ◆ *SUPRA Server PDM Glossary*, P26-0675
- ◆ *SUPRA Server PDM Messages and Codes Reference Manual (RDM/PDM Support for OS/390 & VSE)*, P26-0126

Database administration tasks

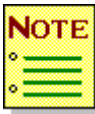
- ◆ *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250
- ◆ *SUPRA Server PDM Directory Online User's Guide (OS/390 & VSE)*, P26-1260
- ◆ *SUPRA Server PDM Directory Batch User's Guide (OS/390 & VSE)*, P26-1261
- ◆ *SUPRA Server PDM DBA Utilities User's Guide (OS/390 & VSE)*, P26-6260
- ◆ *SUPRA Server PDM Logging and Recovery (OS/390 & VSE)*, P26-2223
- ◆ *SUPRA Server PDM Tuning Guide (OS/390 & VSE)*, P26-0225
- ◆ *SUPRA Server PDM RDM Administration Guide (OS/390 & VSE)*, P26-8220
- ◆ *SUPRA Server PDM RDM PDM Support Supplement (OS/390 & VSE)*, P26-8221
- ◆ *SUPRA Server PDM RDM VSAM Support Supplement (OS/390 & VSE)*, P26-8222
- ◆ *SUPRA Server PDM Migration Guide (OS/390 & VSE)*, P26-0550*
- ◆ *SUPRA Server PDM Windows Client Support User's Guide*, P26-7500*
- ◆ *SPECTRA Administrator's Guide*, P26-9220

Application programming tasks

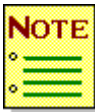
- ◆ *SUPRA Server PDM DML Programming Guide (OS/390 & VSE)*, P26-4340
- ◆ *SUPRA Server PDM RDM COBOL Programming Guide (OS/390 & VSE)*, P26-8330
- ◆ *SUPRA Server PDM RDM PL/1 Programming Guide (OS/390 & VSE)*, P26-8331
- ◆ *SUPRA Server PDM Migration Guide (OS/390 & VSE)*, P26-0550*
- ◆ *SUPRA Server PDM Windows Client Support User's Guide*, P26-7500*

Report tasks

- ◆ *SPECTRA User's Guide*, P26-9561



Manuals marked with an asterisk (*) are listed more than once because you use them for multiple tasks.



Educational material is available from your regional Cincom education department.

1

Using the Batch Directory Maintenance facility

Updating Batch or Online Directory

You use the Batch or Online Directory Maintenance facility to update the Directory. The operation of both facilities is similar; both ensure names are unique and your input is valid. To use the Batch Directory Maintenance facility, you code a series of input statements for each entity you want to update.

You may want to use the Batch Directory Maintenance facility to:

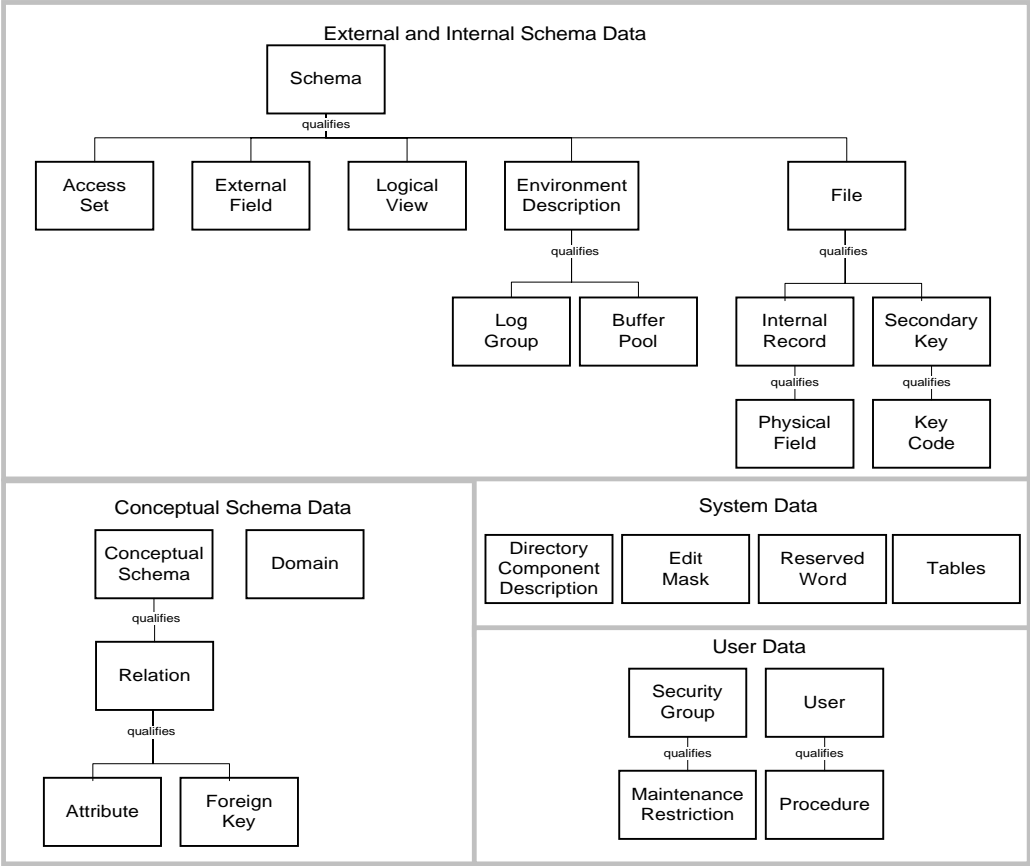
- ◆ Process large volumes of input that would be too time-consuming to enter using the Online Directory Maintenance facility or that should be scheduled during off hours.
- ◆ Keep an audit trail of changes made to the Directory.
- ◆ Allow the same Directory Maintenance input to be used multiple times on the same or different Directories.
- ◆ Process Directory Maintenance statements created by other programs, such as the Inter-Directory Copy utility or DDL convert.

OS/390 **VSE**

Your installation tape contains several catalogued procedures and sample JCL members for executing Batch Directory Maintenance. For more information on the procedures and sample JCL members, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

Before using this manual, you should be familiar with what categories the Directory maintains and the hierarchical relationship among categories.

The hierarchy of categories on the Directory is shown in the following figure for easy reference. For an explanation of the categories and their relationships, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.



Initiating Batch Directory Maintenance

To initiate Batch Directory Maintenance processing, you must submit a +SIGNON statement containing a user ID and password. The password is not printed on the input statement image list. The +SIGNON statement is one of the Run option definition statements. See [“Using Run option definition statements”](#) on page 75 for more information.

To use the Batch Directory Maintenance facility, you must be defined as a DBA on the Directory. If you chose the Password Checking option in the Directory Component Description, Directory Maintenance checks your sign-on password against the password in the DBA's user record. If you display a User entity, Directory Maintenance does not print the password on the formatted output.

The Maintenance Restriction and Security Group categories also control access to the Directory. You can permit or deny a user or group of users access to any entity or category of entities on the Directory, or the use of any Directory Maintenance command. For information on how to define Security Groups, refer to the [SUPRA Server PDM and Directory Administration Guide \(OS/390 & VSE\)](#), P26-2250.

Processing Batch Directory Maintenance

After validating your user ID and password, Directory Maintenance processes:

- ◆ Run option definition statements, which provide processing and printing options
- ◆ Naming data transactions, if the entity is qualified by another entity
- ◆ Command statements, which perform maintenance functions on the named entity
- ◆ Comments

Directory Maintenance processes input records in the sequence coded. The format for all statements is one or more 80-character, fixed-length records. Positions 73–80 are reserved and are ignored unless you activate the Sequence Number Checking (+SEQUENCE) option (see “Using Run option definition statements” on page 75).

Run option definition statements

Run option definition statements offer processing and print options. You use these statements to sign on, check the syntax of input statements, continue or halt execution after an error, define a null character, check the sequence numbers on input statements, and control the printed output. “Using Run option definition statements” on page 75 explains these options.

Naming data transactions

In Directory Maintenance, you must qualify most entities. To do this, you provide the qualification as part of the transaction, or you specify the qualifying data on a naming data transaction. A naming data transaction contains the category code and the applicable entity name but no command field. Once you code the naming data, the names are carried over to subsequent transactions until another naming data transaction changes them. These saved names are known as *sticky fields*. For example, suppose you want to specify the qualifying categories for a Buffer Pool. The Schema category qualifies the Environment Description category, which qualifies the Buffer Pool category, so you must specify the Schema and Environment Description in addition to the Buffer Pool. Now suppose the Schema has already been specified, but the Environment Description, named ENVDESC1, has not. Before coding the command statement, you code this naming data transaction:

```
0000000001111111112222222223333333334444444455555555666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
```

```
ED ENVDESC1
```

Entity names must conform to certain rules.

The following table summarizes all naming conventions; these rules are shown with the ADD command for each category:

Entity category	Length	Naming conventions
Access Set	1–30 char.	The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters External Field 1–30 characters or hyphens. However, the final character cannot be a hyphen.
Attribute	1–25 char.	
Conceptual Schema	1–30 char.	
Domain	1–30 char.	
Edit Mask	1–30 char.	
Foreign Key	1–30 char.	
Logical View	1–30 char.	
Procedure	1–30 char.	
Relation	1–25 char.	
Security Group	1–30 char.	
Table	1–30 char.	
User	1–30 char.	
Buffer Pool	1–4 char.	The first character must be alphabetic, #, \$, or @. The remaining characters can be any combination of alphanumeric or the special characters #, \$, and @.
Environment Description	1–8 char.	
Log Group	1–8 char.	
Maintenance Restriction	1–8 char.	
File	4 char.	The first character must be alphabetic, #, \$, or @. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, @, and -.
Physical Field	8 char.	The first character must be alphabetic, #, \$, @, or *. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, @, and -.

Entity category	Length	Naming conventions
Reserved Word	1–30 char.	The name can be any combination of alphanumeric characters and any printable special characters.
Internal Record Key Code	2 char.	The name can be any combination of alphanumeric characters and any printable special characters or BASE.
Secondary Key	8 char.	For PDM files, the first 4 characters must be the qualifying file, and the next two characters must be SK. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, and @. For DL/I files, a Secondary Key's name must also be 8 characters, but the entire name can be any combination of alphanumeric characters and the special characters #, \$, and @.
Directory Component	11 char.	Currently, this name must be Description CD#CSXM0000.

Command statements

Command statements perform maintenance to the Directory. If an entity is qualified within the hierarchy, you must establish the naming data, either by a naming data transaction (see “Run option definition statements” on page 28) or a prior command performed on the qualifying entity. The table under “Category to command matrix” on page 42 shows the qualifying data, if any, required for each category.

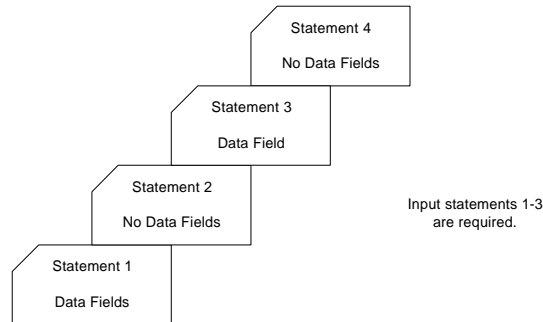
A command statement contains a 2-character command code (see the table in “Entering Directory Maintenance commands” on page 40) in the first two positions, followed by a 2-character category code (see the table under “Category to command matrix” on page 42) in the fourth and fifth positions. The entity name and characteristics begin in the seventh position and continue over as many statements as needed. If you use multiple statements for a command, only the first statement contains the command and category codes. The first six positions must be blank on all subsequent input statements for that command. The LONG EDIT and VARIABLE EDIT commands are exceptions, because they use columns 1–72 for text.

For example, to add a Logical View named CUSTOMERS and its usability flags, code the statements that follow. The numbers above the sample statements indicate the column in which you enter the data:

```
0000000001111111112222222223333333334444444455555555666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
AD LV CUSTOMERS
  Y Y Y Y Y
```

Directory Maintenance processes input statements in the sequence coded. If a command requires multiple input statements, you must submit all of the input statements even if they contain blank fields (unless the blank statement is the last statement or statements). For example, if a transaction consists of four statements and the last two statements are blank, you need submit only the first two statements. However, if that transaction has data on the first statement, a blank second statement, data on the third statement, and a blank fourth statement, you can omit only the fourth statement.

The following figure illustrates this concept using an External Field transaction to change the translate Table name.



Statement 1

```

00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
  
```

CG XF Delivery Data

Statement 2

```

00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
  
```

Statement 3

```

00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
  
```

Month-Table

Comment statements

Comment statements can contain any information. Comment statements contain an asterisk (*) in the first position followed by the comment in positions 2–72. You can include these statements with Command statements or Run option definition statements. Because a Comment statement terminates the input for a transaction, place Comment statements before or after all statements for a given Command or Run option definition statement. Comment statements coded within the LONG EDIT and VARIABLE EDIT commands are taken as text cards and do not terminate input.

Terminating Batch Directory Maintenance

After processing all statements, Directory Maintenance terminates and produces:

- ◆ An audit listing of the processing, successful or not.
- ◆ The output printed according to the Run option definition statements you entered.

Audit listing

The first page contains title information. Standard output starts on the second page. All input statements are numbered. The audit trail comprises (in order):

1. The name of the Directory (from the Directory Component Description entity).
2. The Run option definition statements used (the sign-on password is not printed).
3. All input statement images and transactions (includes default values).
4. Statistics for the run (total statements read, total commands processed, total commands executed, total errors, and the maximum error code).

If Directory Maintenance detects any errors, the printout shows, if appropriate, a short error message to the right of the data and a long error message at the end of the transaction.

The audit listing shown in the following figure shows the output from adding a file:

```

CINCOM SYSTEMS,INC          TIS/XA DIRECTOR MAINTENANCE
                             Nov.23,1999 13:10:05 PAGE 1

12:AD FI CS-N               CNT00600
13:          CSTNAME CSI.CSTNAME          CNT00610
14:          PRIMARY BDAM  78    18240    0    4
CNT00620
15:                                N          CNT00630
16:          Y          N    N    N          CNT00640

IS/XA DIRECTORY MAINTENANCE
FILE: ADD

SCHEMA: CSISCH20          FILE: CS-N
LAST UPDATE hh.mm.ss mm/dd/yy V: 0000 USER: CSI-DBA
DNAME:          CSTNAME
DATA SET NAME:    CSI.CSTNAME

FILE TYPE:          PRIMARY
FILE ACCESS METHOD:  BDAM
FILE DEVICE TYPE:   3350
FILE DEVICE ASSIGNMENT:
LOGICAL RECORD RECORDS: 78
TOTAL TRACKS:       0
RECORDS PER BLOCK:  0
BLOCKS PER TRACK:   4
VSAM CONTROL INTERVAL:
TOTAL VSAM CNTRL INTVL:
SITE EXIT NAME:
CODED RECORD INDICATOR: N
VSE INDICATOR:      N
OLD FILE INDICATOR:  N
**BASE IR DATA**
GET VALID:          Y
BEFORE GET EXIT:
AFTER GET EXIT:
REPLACE VALID:      N
BEFORE REPLACE EXIT:
AFTER REPLACE EXIT:
INSERT VALID:        N
BEFORE INSERT EXIT:
AFTER INSERT EXIT:
DELETE VALID:        N
BEFORE DELETE EXIT:
AFTER DELETE EXIT:

```

*****CSM501I END ADD FILE: MAXIMUM ERROR CODE 0

Run option definition statements to control output

Run option definition statements control the content and format of the printed output. The List Control options specify whether the printed output includes the input statement image list and any error or completion messages, or that information plus command execution information (this is the default option). You can also use the List Control options to specify whether printing is continuous or each logical transaction begins on a new page (this is the default option). For more information about these options, see [“Using Run option definition statements”](#) on page 75. Whenever the LONG TEXT editor adds, changes, deletes, or resequences text, Directory Maintenance prints all long text to show the changes.

Recovering from errors

The audit listing notifies you of successful or unsuccessful task completion. For error conditions, Directory Maintenance prints all applicable error messages. The audit listing shows short error messages to the right of the data and long error messages at the end of the transaction. When an error occurs, Directory Maintenance sets a return code before returning to the operating system and displays the highest error code in the statistics for the audit listing.

If you activate the Continue On Error (+ERRCONT) option, Directory Maintenance attempts the next transaction after an error (see “[Continue on Error option](#)” on page 77). Otherwise, Directory Maintenance only validates the remaining transactions. You can submit corrections in another run.

The *SUPRA Server PDM Messages and Codes Reference Manual (RDM/PDM Support for OS/390 & VSE)*, P26-0126, explains all messages and codes.

Directory recovery

Any time a database task or application fails to reach normal completion, the integrity of the database is questionable. For example, a single logical update can require multiple updates to many physical records. A failure of the database may mean that only a portion of the logical update was successful and, therefore, many physical records may contain inconsistent data.

Incomplete updates to related database records cannot be permitted. In the case of database failure, you must recover to a point at which data integrity is assured before you continue processing. This requires the use of PDM Task Log or System Log Files to maintain records of all updates to Directory data until the updates are logically complete. Also, you should retain and periodically update backup versions of the entire Directory Database so they can be used if the Log Files are lost.

Various types of failure can occur to the Directory Database. Because the Directory is a complex database, proper recovery is essential. Recovery procedures for the Directory Database are the same as for any database. Thus, you can use several methods of recovery, backup, and restart. The method used depends on the severity of the failure. For detailed information on recovery, refer to the *SUPRA Server PDM Logging and Recovery Guide (OS/390 & VSE)*, P26-2223.

Abend conditions

Internal errors in Directory Maintenance may cause an abnormal termination (abend). Directory Maintenance prints appropriate abend messages on the audit listing and, if you set the Console Option to Y in the Directory Component Description, displays these messages on the system console. If you are using task-level recovery, SUPRA backs out any updates made because the most recent commit point (most commit points occur at the completion of an update). When an abend occurs, you should:

- ◆ Use the restart or recovery procedure described in “[System or task failure](#)” on page 39.
- ◆ For addition abend information, refer to the [SUPRA Server PDM Messages and Codes Reference Manual \(RDM/PDM Support for OS/390 & VSE\)](#), P26-0126.
- ◆ Report all abend conditions to your Cincom Support Center as soon as possible.

System or task failure

Task-level recovery is optional with Batch Directory Maintenance; however, using task-level recovery allows easier recovery from failures. For more information on recovering your database, refer to the [*SUPRA Server PDM Logging and Recovery Guide \(OS/390 & VSE\)*](#), P26-2223.

If you use task-level recovery and a failure occurs, you should rerun the Batch Directory Maintenance job with the same input statements. Batch Directory Maintenance determines how many input statements were processed before the failure and continues at the next input statement until completion. This allows you to complete the job without knowing how much input was processed before the failure. However, if you submit a job that does not have the same input statements as the abended job, Directory Maintenance prints a message about the mismatch, recovers the database to the most recent commit, and terminates the job.

If you do not use task-level recovery and a failure occurs, you must restore the Directory files from backup copies and then rerun the complete Batch Directory Maintenance job.

Entering Directory Maintenance commands

The following table lists the Directory Maintenance commands, the 2-character codes you enter to select each command, and the function of each command. The table also lists the file utility subcommands.



Considerations for the RELATE, RELATIONSHIP CHANGE, RELATIONSHIP DISPLAY, and REMOVE commands are in “Using the relationship commands” on page 47. Considerations for the STRUCTURE DISPLAY command are in “Using the STRUCTURE DISPLAY command” on page 51. Considerations for the COPY, DELETE, and RENAME commands are in “Using the COPY, DELETE, and RENAME commands” on page 55 and “COPY, DELETE, and RENAME command changes” on page 56, and considerations for the CHECK command are in “Using the CHECK command” on page 71.

Command	Code	Function
ADD	AD	Creates an entity description
CHANGE	CG	Modifies an entity description
CHECK	CK	Verifies consistency of your entity descriptions
COPY	CO	Copies an entity description, relationships established for that entity, and any entities qualified by the copied entity
DELETE	DE	Deletes an entity description, relationships established for that entity, and any entities qualified by the deleted entity
DISPLAY	DI	Displays or prints an entity description
LONG EDIT	LE	Creates or modifies descriptive text associated with an entity
SHORT EDIT	SE	
LONG TEXT	LT	Displays or prints descriptive text associated with an entity
SHORT TEXT	ST	

Command	Code	Function
RELATE	RL	Establishes relationships between entities
RELATIONSHIP CHANGE	RC	Modifies relationship data between two related entities
RELATIONSHIP DISPLAY	RD	Displays or prints relationship data between two related entities
REMOVE	RM	Removes relationships between entities
RENAME	RN	Changes an entity name
SPECIAL FUNCTION	SF	Permits or denies active schema maintenance
STRUCTURE DISPLAY	SD	Displays or prints the name of entities that are subordinate to or related to the specified entity
UTILITIES	UT	Provides subcommands for database file management:
CLOSE	CL	◆ Closes a database file
DEPOPULATE	DP	◆ Depopulates a secondary key
FORMAT	FT	◆ Formats a database file
OPEN	OP	◆ Opens a database file
POPULATE	PP	◆ Populates a secondary key
REORGANIZE	RO	◆ Reorganizes a secondary key
VARIABLE DISPLAY	VD	Displays or prints variable data associated with an entity
VARIABLE EDIT	VE	Creates or modifies variable data associated with an entity

Category to command matrix

You cannot use all commands for every category. For example, the Access Set category does not have relational data for any of its relationships; therefore, the RELATIONSHIP CHANGE and RELATIONSHIP DISPLAY commands are not valid for that category. The following table lists the valid commands for each category and shows the category codes you submit to select a category. That table also shows the qualifying categories, if any, for each category.

This is the key for the top row of commands in the table:

AD	Add	LE	Long Edit	SE	Short Edit
CG	Change	LT	Long Text	ST	Short Text
CK	Check	RL	Relate	SF	Special Function
CO	Copy	RC	Relationship Change	SD	Structure Display
DE	Delete	RD	Relationship Display	UT	Utility
DI	Display	RM	Remove	VE	Variable Edit
		RN	Rename	VD	Variable Display

Category		Commands																			
		AD	CG	CK	CO	DE	DI	LE	LT	RL	RC	RD	RM	RN	SE	ST	SF	SD	UT	VE	VD
Access Set	AS	●	●	●	●	●	●	●	●	●			●	●	●	●		●		●	●
Schema																					
Attribute	AT	●	●			●	●	●	●	●			●	●	●	●		●			
Conceptual																					
Schema																					
Relation																					
Buffer Pool	BP	●	●			●	●							●				●			
Schema																					
Environment																					
Description																					
Conceptual	CS	●		●	●	●	●	●	●	●			●	●	●	●		●			
Schema																					
Directory	DC	●	●				●	●	●						●	●					
Component																					
Description																					
Domain	DM	●	●			●	●	●	●					●	●	●		●			
Edit Mask	EM	●	●			●	●	●	●					●	●	●					

Category		Commands																			
		AD	CG	CK	CO	DE	DI	LE	LT	RL	RC	RD	RM	RN	SE	ST	SF	SD	UT	VE	VD
Environment Description Schema	ED	•	•		•	•	•	•	•	•	•	•	•	•	•	•		•			
External Field Schema	XF	•	•			•	•	•	•	•	•	•	•	•	•	•		•			
File Schema	FI	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		
Foreign Key Conceptual Schema Relation	FK	•	•			•	•	•	•	•			•	•	•	•		•			
Internal Record Schema File	IR	•	•	•		•	•	•	•	•			•	•	•	•		•			
Key Code Schema File Secondary Key	KC	•				•	•	•	•	•	•	•	•		•	•		•			
Log Group Schema Environment Description	LG	•	•			•	•							•							
Logical View Schema	LV	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•			
Maintenance Restriction	MR	•	•			•	•							•							
Physical Field Schema File Internal Record	PF	•	•			•	•	•	•	•	•	•	•	•	•	•		•			
Procedure User	PR	•	•		•	•	•	•	•					•	•	•			•	•	
Relation Conceptual Schema	RE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•			
Reserved Word	RW	•				•		•	•						•	•					

Category		Commands																			
		AD	CG	CK	CO	DE	DI	LE	LT	RL	RC	RD	RM	RN	SE	ST	SF	SD	UT	VE	VD
Schema	SC	•	•	•	•	•	•	•	•	•			•	•	•	•	•	•			
Secondary Key Schema File	SK	•	•	•	•	•	•	•	•	•			•	•	•	•		•			
Security Group	SG	•			•	•	•	•	•	•			•	•	•	•		•			
Tables	TA	•				•	•	•	•					•	•	•				•	•
User	US	•	•			•	•	•	•	•	•	•	•		•	•		•		•	•

Fields causing inconsistency

Directory Maintenance will automatically mark some entities inconsistent if you change them. The following table lists the category where inconsistencies are possible, the fields causing inconsistency when changes are made, and the entities marked inconsistent.

Category	Fields causing inconsistency	Entities marked inconsistent
Access Set	ACCESS SET TYPE	Access set All related logical views
Attribute	DATA FORMAT EXTERNAL LENGTH FUNCTION NUMBER DECIMAL PLACES PRIMARY KEY SIGNED OPTION TRANSLATE EDIT NAME TRANSLATE EDIT SWITCH UNIT	Relation Conceptual schema
Buffer Pool	DIRECT BUFFER COUNT SERIAL BUFFER COUNT SERIAL THREAD COUNT	Schema
Environment Description	ACCESS MODE LOG OPTIONS STATISTICS INDICATOR TASK LOG OPTION	Schema
File	ACCESS METHOD BLOCKS PER TRACK FILE TYPE LOGICAL RECORD LENGTH OLD FILE INDICATOR TOTAL LOGICAL RECORDS TOTAL TRACKS VSAM CONTROL INTERVAL VSE INDICATOR	File Schema
Foreign Key	CLUSTERED OPTION CHAINED OPTION	Relation Conceptual schema

Category	Fields causing inconsistency	Entities marked inconsistent
Log Group	LOG FILE NAME LOG FILE MAX BLK	Schema
Physical Field	DATA FORMAT FIELD LENGTH FUNCTION KEY REFERBACK DEFN# LINKPATH TYPE NUMBER DECIMAL PLACES SIGNED OPTION UNIT	Internal record File Schema
Relation	DDNAME EXTENSION FILE NAME RELATION TYPE SUBTYPE	Relation Conceptual schema

Using the relationship commands

You establish and maintain relationships between entities using these commands: RELATE, RELATIONSHIP CHANGE, RELATIONSHIP DISPLAY, and REMOVE. All relationships use the RELATE and REMOVE commands to establish and delete those relationships. In addition, some related entities require relationship attribute data. Use the RELATIONSHIP CHANGE and RELATIONSHIP DISPLAY commands to maintain relationship attribute data. If related entities do not have attribute data, the RELATIONSHIP CHANGE and RELATIONSHIP DISPLAY commands are not valid. See the table under “[Relationship categories and commands](#)” on page 50 for valid categories.

You must code at least two input statements for each relationship function. The first input statement identifies the relationship command, the category code for the main entity, and the name of the main entity. The second input statement identifies the subcategory code for the related entity and the name of the related entity. For some categories, you must also code relationship data on a third input statement.

For example, to relate a file to an Environment Description, code these input statements:

Input statement 1

```
00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
```

RL FI file name

Input statement 2

```
00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
```

ED environment description name

Input statement 3

```
00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
```

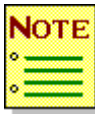
SUPD buffer pool name

If you relate multiple entities, you need not repeat the first input statement because it contains sticky fields. Simply code the second and third input statements for each related entity until you have specified all related entities. In some cases, you can code ALL. instead of related entity names.

Using ALL. with the relationship commands

You can use ALL. with the RELATE, REMOVE, and RELATIONSHIP DISPLAY commands as follows:

- ◆ **RELATE.** Using ALL. with the RELATE command relates all existing entities within the subcategory not already related to the main entity. Use care when using ALL., because you might relate far more entities than you anticipated. For the Batch Directory Maintenance facility, ALL. is not valid when relationship data exists.
- ◆ **REMOVE.** Using ALL. with the REMOVE command deletes all established relationships between the main entity and the entities in the subcategory.
- ◆ **RELATIONSHIP DISPLAY.** Using ALL. with the RELATIONSHIP DISPLAY command prints all established relationships between the main entity and entities in the subcategory along with any relationship data.



For the Batch Directory Maintenance facility, ALL. is not valid with the RELATIONSHIP CHANGE command.

Relationship categories and commands

The following table shows the relationships where the RELATE (RL), REMOVE (RM), RELATIONSHIP CHANGE (RC), and RELATIONSHIP DISPLAY (RD) commands are valid. If ALL. is valid with the command, it is in parentheses following the command.

Category	Subcategory	Valid commands
Access Set	Logical View	RL(ALL.), RM(ALL.)
Attribute	External Field Foreign Key User	RL(ALL.), RM(ALL.) RL(ALL.), RM(ALL.) RL, RM(ALL.)
Conceptual Schema	Schema	RL, RM(ALL.)
Environment Description	File Logical View	RL, RM(ALL.), RC, RD(ALL.) RL, RM(ALL.), RC, RD(ALL.)
External Field	Attribute Logical View Physical Field User	RL, RM(ALL.) RL, RM(ALL.), RC, RD(ALL.) RL, RM(ALL.) RL, RM(ALL.)
File	Environment Description Secondary Key	RL, RM(ALL.), RC, RD(ALL.) RL(ALL.), RM(ALL.)
Foreign Key	Attribute	RL(ALL.), RM(ALL.)
Internal Record	Relation	RL, RM(ALL.)
Key Code	Physical Field	RL, RM(ALL.), RC, RD(ALL.)
Logical View	Access Set Environment Description External Field User	RL(ALL.), RM(ALL.) RL, RM(ALL.), RC, RD(ALL.) RL, RM(ALL.), RC, RD(ALL.) RL, RM(ALL.), RC, RD(ALL.)
Physical Field	External Field Key Code	RL(ALL.), RM(ALL.) RL, RM(ALL.), RC, RD(ALL.)
Relation	Internal Record Schema User	RL, RM(ALL.) RL, RM(ALL.) RL, RM(ALL.), RC, RD(ALL.)
Schema	Conceptual Schema Relation	RL, RM(ALL.) RL(ALL.), RM(ALL.)
Secondary Key	File	RL, RM(ALL.)
Security Group	User	RL, RM(ALL.)
User	Attribute External Field Logical View Relation Security Group	RL(ALL.), RM(ALL.) RL(ALL.), RM(ALL.) RL, RM(ALL.), RC, RD(ALL.) RL, RM(ALL.), RC, RD(ALL.) RL, RM(ALL.)

Using the STRUCTURE DISPLAY command

Use the STRUCTURE DISPLAY command to review entities that are either qualified by, related to, or in the case of Physical Fields, subdefinitions of a specific entity. Directory Maintenance shows entities in the sequence in which you added them. Entities are indented to show the hierarchy. In some cases, Directory Maintenance also displays additional subdefinitions or qualifying entities. For example, in a File-to-Buffer Pool structure, Environment Descriptions qualify Buffer Pools, so the Environment Description is shown in addition to the Buffer Pool. The result of a STRUCTURE DISPLAY command for the CDFI File to the CDBP Buffer Pool (for the CSIDEFSC Schema) follows:

```
ED      CSIDEFED
BP      CDBP
```

In addition, displayed Physical Fields are numbered (PF00, PF01, PF02, etc.) to show their relative position in the structure. The numbering always starts at PF00, no matter where in the actual structure you start the display. For example, in an Internal Record-to-Physical Field structure, a STRUCTURE DISPLAY (for Internal Record 25 in file C\$-D of the CSISCH20 Schema) results in the following:

```
PF00    C$-D25SG
PF01    C$-D25C1
PF01    C$-D25E1
PF02    C$-D25D1
PF02    C$-D2501
PF01    C$-D25C2
```

The following table shows the entities you can display using the STRUCTURE DISPLAY command. This table includes the category of the main entity and the subcategory of the displayed entities. Any additional subdefinitions or qualifying entities are indented under the applicable subcategory.

Main category	Subcategory and additional entities
Access Set	Logical View
Attribute	External Field Schema Foreign Key Schema
Buffer Pool	File
Conceptual Schema	Relation Schema
Domain	Attribute Conceptual Schema Relation
Environment Description	Buffer Pool File Log Group Logical View
External Field	Attribute Conceptual Schema Relation Logical View Physical Field File Internal Record
File	Buffer Pool Environment Description External Field Internal Record Physical Field (all levels) Internal Record Key Code Secondary Key Physical Field External Field Physical Field (all levels) Internal Record Secondary Key

Main category	Subcategory and additional entities
Foreign Key	Attribute Domain
Internal Record	External Field Physical Field (all levels) Physical Field (all levels)
Key Code	External Field Schema File Internal Record Physical Field Physical Field Schema File Internal Record
Logical View	Access Set Environment Description External Field User
Physical Field	External Field Key Code Schema File Secondary Key Physical Field (all children)
Relation	Attribute Domain External Field Attribute Schema Foreign Key Attribute Domain Internal Record File Schema Schema Primary Key Attribute Domain Schema User

Main category	Subcategory and additional entities
Schema	Access Set Conceptual Schema Environment Description External Field File Logical View Relation Conceptual Schema
Security Group	Maintenance Restriction User
Secondary Key	External Field Key Code Physical Field File Key Code Physical Field Key Code
User	Logical View Schema Procedure Relation Conceptual Schema Security Group

Using the COPY, DELETE, and RENAME commands

Executing a COPY, DELETE, or RENAME command for an entity may also affect other entities and relationships. For example, renaming or deleting an Edit Mask or Table affects any External Fields using those entities.

When you copy an entity, you can also copy existing entities and relationships in other categories. For example, when you copy a file, you can also copy any External Fields related to that file. In some cases, Directory Maintenance automatically copies relationships. For example, when you copy an Environment Description, Directory Maintenance also copies existing relationships to files. Directory Maintenance also copies all entities qualified by the copied entity.

Deleting an entity deletes all relationships to that entity and all other entities qualified by the deleted entity. For example, if you delete a file, Directory Maintenance deletes all Internal Record, Physical Field, Secondary Key, and Key Code entities for that file. In some cases, when you delete an entity, you may request that Directory Maintenance delete related entities. For example, if you delete a file, you may request that Directory Maintenance delete all External Fields related to the Physical Fields for that file.

Other considerations include changes that you must make or that Directory Maintenance automatically makes when using the COPY, DELETE, and RENAME commands (“[COPY, DELETE, and RENAME command changes](#)” on page 56), and record holding by the PDM (“[Holding records after command changes](#)” on page 70).

COPY, DELETE, and RENAME command changes

You must also consider changes that either occur or must occur in certain categories when you use the COPY, DELETE, and RENAME commands. The three types of changes include those that you must make, those that Directory Maintenance automatically makes, and those that Directory Maintenance automatically makes if you specified the option to do so.

This section is made up of three lists: COPY Command Changes, DELETE Command Changes, and RENAME Command Changes. Each list contains:

- ◆ Command name.
- ◆ Categories in which changes either occur or must occur when you use the command.
- ◆ Required and automatic changes in each category.

COPY command changes

ACCESS SET

Required	None
Automatic	Directory Maintenance marks the Access Set inconsistent.
If specified	If the Relate LV Option is Y, Directory Maintenance copies the relationships between the source Access Set and the Logical Views that exist in the target Schema. Directory Maintenance also marks all related Logical Views inconsistent.

CONCEPTUAL SCHEMA

Required	None
Automatic	<p>Directory Maintenance marks the target Conceptual Schema with the same consistency as source Conceptual Schema.</p> <p>Directory Maintenance copies all entities qualified by the source Conceptual Schema along with their relationships to the target Conceptual Schema.</p> <p>Directory Maintenance copies all Relation-to-User and Attribute-to-User relationships.</p>
If specified	None

ENVIRONMENT DESCRIPTION

Required	None
Automatic	<p>Directory Maintenance marks the target Schema inconsistent.</p> <p>Directory Maintenance copies the related Buffer Pools.</p> <p>Directory Maintenance copies the relationships to files and Logical Views that exist in the target Schema.</p>
If specified	None

FILE

- Required** You must relate the file to the required Environment Description(s).
- Automatic** Directory Maintenance marks the target Schema, file, and all Internal Records and Secondary Keys in the file inconsistent.
- Directory Maintenance copies the related Internal Records and Physical Fields.
- Directory Maintenance renames all child Secondary Keys.
- If specified** If the Copy External Fields option is Y, Directory Maintenance copies and relates the related External Fields that do not exist in the target schema to the associated Physical Fields in the file. If the External Fields already exist in the target Schema and are not already related to a physical Field, they are related to the associated Physical Fields in the file.

LOGICAL VIEW

- Required** You must change the Procedures in the target Schema if applicable.
- Automatic** Directory Maintenance marks the Logical View inconsistent.
- Directory Maintenance relates the Logical View to the Environment Descriptions that exist in the target Schema.
- Directory Maintenance renames all child Secondary Keys.
- If specified** If the Relate US option is Y, Directory Maintenance copies the relationships between the source Logical View and the Users that exist in the target Schema.
- If the Relate AS option is Y, Directory Maintenance copies the relationships between the source Logical View and the Access Sets that exist in the target Schema.
- If the Copy External Fields option is Y, Directory Maintenance copies and relates the External Fields in the source Logical View to the new Logical View. If the option is N, Directory Maintenance relates the External Fields that are related to the source Logical View and exist in the target Schema to the new Logical View.

PROCEDURE

Required	None
Automatic	Directory Maintenance relates the Procedure to the target User.
If specified	None

RELATION

Required	None
Automatic	<p>Directory Maintenance marks the target Conceptual Schema and Relation inconsistent.</p> <p>Directory Maintenance copies the Relation, primary keys, Foreign Keys, and attributes to the target Conceptual Schema along with their relationships. When the source and target Conceptual Schema are the same, Directory Maintenance does not copy the primary key-to-Foreign Key relationships.</p> <p>Directory Maintenance copies the Relation-to-User and Attribute-to-User relationships.</p>
If specified	None

SECONDARY KEY

Required	None
Automatic	<p>Directory Maintenance marks the target Secondary Key, File, and Schema inconsistent.</p> <p>Directory Maintenance copies the relationships to index files.</p> <p>Directory Maintenance copies the Key Codes with related structure.</p>
If specified	None

SECURITY GROUP

Required	None
Automatic	Directory Maintenance copies all Maintenance Restrictions to the target Security Group.
If specified	None

SCHEMA

Required	None
Automatic	Directory Maintenance copies all entities qualified by the source Schema to the target Schema.
If specified	<p>If the Relate US option is Y, Directory Maintenance relates the Users related to Logical Views in the source Schema to the Logical Views in the target Schema.</p> <p>If source Schema is consistent, Directory Maintenance marks the target Schema consistent.</p>

DELETE command changes

ACCESS SET

Required	None
Automatic	Directory Maintenance deletes the relationships to Logical Views. Directory Maintenance marks the Logical Views inconsistent.
If specified	None

ATTRIBUTE

Required	None
Automatic	Directory Maintenance marks the Conceptual Schema and Relation inconsistent. Directory Maintenance deletes the relationships to Domains, External Fields, Foreign Keys, primary keys, and Users.
If specified	None

BUFFER POOL

Required	You must use the RELATIONSHIP CHANGE command to change the Environment Description-to-File relationships.
Automatic	Directory Maintenance marks the Schema inconsistent.
If specified	None

CONCEPTUAL SCHEMA

Required	None
Automatic	Directory Maintenance deletes all entities that are qualified by the Conceptual Schema and all relationships to those entities.
If specified	If the Schema Generation Indicator is Y, Directory Maintenance sets it to M.

DOMAIN

Required	You must use the CHANGE command to remove all relationships to Attributes or delete the related attributes.
Automatic	None
If specified	None

EDIT MASK

Required	You must change the Attributes and External Fields that refer to the Edit Mask.
Automatic	None
If specified	None

ENVIRONMENT DESCRIPTION

Required	You must change the CSIPARM File.
Automatic	Directory Maintenance marks the Schema inconsistent. Directory Maintenance deletes the related Buffer Pools. Directory Maintenance deletes the relationships to Files, Logical Views, and the Schema.
If specified	None

EXTERNAL FIELD

Required	You must change any Procedures that use the External Field and any Access Sets for which the External Field is a control key.
Automatic	Directory Maintenance deletes the relationships to the Logical Views, Physical Field, and Schema.
If specified	None

FILE

Required	You must change any Access Sets that use the file.
Automatic	Directory Maintenance marks the Schema inconsistent. Directory Maintenance deletes the related Internal Records, Secondary Keys, and Physical Fields. Directory Maintenance deletes the relationships to Relations, primary keys, and Attributes.
If specified	If the Remove LV option is Y, Directory Maintenance removes related External Fields from Logical Views. If the Delete XF option is Y, Directory Maintenance deletes related External Fields.

FOREIGN KEY

Required	None
Automatic	Directory Maintenance marks the Conceptual Schema and Relation inconsistent. Directory Maintenance deletes relationships to Relations, primary keys, and Attributes.
If specified	None

INTERNAL RECORD

Required	You must change the Access Sets that use the deleted Physical Fields.
Automatic	Directory Maintenance deletes the associated Physical Fields. Directory Maintenance marks the Schema inconsistent.
If specified	If the Remove LV option is Y, Directory Maintenance removes the related External Fields from Logical Views. If the Delete XF option is Y, Directory Maintenance deleted the related External Fields.

KEY CODE

Required	None
Automatic	Directory Maintenance marks the Schema, File, and Secondary Key inconsistent. Directory Maintenance deletes the Key Code-to-Physical Field relationship.
If specified	None

LOG GROUP

Required	None
Automatic	Directory Maintenance marks the Schema inconsistent.
If specified	None

LOGICAL VIEW

Required	None
Automatic	Directory Maintenance deletes the relationships to the Schema, Environment Descriptions, External Fields, Users, and Access Sets.
If specified	If the Delete AS option is Y and the related Access Set is not related to another Logical View, Directory Maintenance deletes the related Access Sets.

MAINTENANCE RESTRICTION

Required	None
Automatic	Directory Maintenance documents by one the Maintenance Restriction Count field for the qualifying Security Group.
If specified	None

PHYSICAL FIELD

Required	You must change Access Sets that use the deleted Physical Field.
Automatic	Directory Maintenance deletes child Physical Fields. Directory Maintenance marks the Schema, Files, and Internal Record inconsistent.
If specified	If the Remove LV option is Y, Directory Maintenance removes the Physical Field from any Logical Views. If the Delete XF option is Y, Directory Maintenance deletes the related External Fields.

RELATION

Required	None
Automatic	Directory Maintenance marks the Conceptual Schema inconsistent. Directory Maintenance deletes the related Foreign Keys and their relationships. Directory Maintenance deletes the relationships to Attributes, Internal Records, Schemas, and Users.
If specified	None

SCHEMA

Required	You must change the CSIPARM file that uses this Schema name.
Automatic	Directory Maintenance deletes all entities that are qualified by the Schema and all relationships to those entities. Directory Maintenance deletes relationships to Conceptual Schemas and Relations.
If specified	None

SECONDARY KEYS

Required	None
Automatic	Directory Maintenance deletes the relationships to all index files. Directory Maintenance deletes related Key Codes and their relationships. Directory Maintenance marks the File and Schema inconsistent.
If specified	None

SECURITY GROUP

Required	None
Automatic	Directory Maintenance deletes Security Group-to-User relationships. Directory Maintenance deletes related Maintenance Restrictions.
If specified	None

TABLE

Required	You must change any Attributes and External Fields that use the Table.
Automatic	None
If specified	None

USER

Required	None
Automatic	Directory Maintenance deletes relationships to Logical Views. Directory Maintenance deletes private Procedures. Directory Maintenance deletes User-to-Security Group relationships.
If specified	None

RENAME command changes

BUFFER POOL

Required	You must use the RELATIONSHIP CHANGE command to change Environment Description-to-File relationships where you use the Buffer Pool.
Automatic	Directory Maintenance marks the Schema inconsistent.
If specified	None

EDIT MASK

Required	You must change the External Fields that refer to the Edit Mask.
Automatic	None
If specified	None

ENVIRONMENT DESCRIPTION

Required	You must change the REALM parameter in the CSIPARM file to refer to the renamed Environment Description. Refer to the <i>SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)</i> , P26-2250.
Automatic	Directory Maintenance marks the Schema inconsistent.
If specified	None

EXTERNAL FIELD

Required	You must change the Access Sets that use the External Field. You must change any Procedures that use the External Field.
Automatic	None
If specified	None

FILE

Required	You must change the related Access Sets and the ROOT, CNTL, CODE, and linkpath Physical Fields.
Automatic	Directory Maintenance marks the Schema, File, and all Internal Records and Secondary Keys in the File inconsistent. Directory Maintenance renames all Secondary Keys in the File.
If specified	None

LOG GROUP

Required	None
Automatic	Directory Maintenance marks the Schema inconsistent.
If specified	None

LOGICAL VIEW

Required	You must change the Logical View name stored in Procedures, if applicable.
Automatic	None
If specified	None

RELATION SCHEMA

Required	You must change the REALM parameter in the CSIPARM file to refer to the renamed Schema. Refer to the <i>SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)</i> , P26-2250.
Automatic	None
If specified	None

SECONDARY KEY

Required	You must change any Access Sets that use the Secondary Key.
Automatic	None
If specified	None

TABLE

Required	You must change the Attributes, Domains, External Fields, and Physical Fields that refer to the Table.
Automatic	None
If specified	None

Holding records after command changes

Whenever you copy or delete an entity and use Task Level Recovery, the PDM protects records from simultaneous updates by holding all records that are directly or indirectly modified by the COPY and DELETE commands. The number of record holding entries must be large enough to accommodate all affected records; otherwise, Directory Maintenance abends. This condition is most common when copying or deleting a Schema, because you are also copying or deleting all entities qualified by that Schema. You may increase the number of entries in one of the following ways:

- ◆ **Directory maintenance with active schema.** If Directory Maintenance runs with an active Schema (the PDM is Directory-driven), the number of record holding entries is taken from the Maximum Held Records field in the active Environment Description. Only one Environment Description can be active at a time. To increase the number of record holding entries, increase the value of the Maximum Held Records field and then reinitialize the PDM.
- ◆ **Directory maintenance without active schema.** If Directory Maintenance runs without an active Schema (the PDM is boot-driven), the number of record holding entries is taken from the HELD-RECORDS parameter in the bootstrap Schema. You can use Create Environment Description statements to change this value. For information about these statements, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

For more information about record contention, refer to the *SUPRA Server PDM Tuning Guide (OS/390 & VSE)*, P26-0225.

Using the CHECK command

Checking for consistency involves a thorough validation of the characteristics of your database. Inconsistencies are shown on the audit listing with a message indicating the reason. The CHECK command is valid for the following categories:

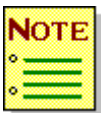
- ◆ Access Set
- ◆ Conceptual Schema
- ◆ File
- ◆ Internal Record
- ◆ Logical View
- ◆ Relation
- ◆ Schema
- ◆ Secondary Key

All of these categories contain a consistency flag as part of their data. When you use the CHECK command, Directory Maintenance sets this field to yes (Y) or no (N), depending on the outcome of the command. You should use the DISPLAY command to determine whether entities are consistent. For specific information about the options available for each CHECK command, refer to the appropriate sections in “[Maintaining Conceptual Schema data](#)” on page 85, “[Maintaining External Schema data](#)” on page 163, and “[Maintaining Internal Schema data](#)” on page 227.

If you check an entity that qualifies subordinate entities, Directory Maintenance also checks the subordinates. For example, checking a file includes checking Internal Records, Secondary Keys, Key Codes, and Physical Fields. Likewise, checking a Schema includes, among the other entities qualified by the Schema, checking the files and all of the entities qualified by the files. If you modify a subordinate entity, you must then check the qualifying entity or entities.

Considerations for using the CHECK command

When validating the Domains, Attributes, and Primary Keys, Directory Maintenance may create potential Foreign Keys for relationships that are not established. These are ignore-type Foreign Keys which show possible relationships that may have been overlooked. Directory Maintenance also creates all necessary relationships to support the generated potential Foreign Keys and displays a message identifying the Foreign Keys that were created. Use the STRUCTURE DISPLAY command with the Relation category to review the Foreign Keys.



Directory Maintenance validates all Foreign Keys in the Relation on the basis of the relation type and assigns a file name if none is specified.

While checking a Schema for consistency, Directory Maintenance also updates some files (calculating data fields from existing values, setting the consistency flag, and so on). Directory Maintenance prevents any other updates to the files until the check is complete. Because checking a Schema for consistency is time-consuming, you should not execute the CHECK command when other updates need to be done.

Checking updated Directory entities

The following table shows the entities you must check following Directory updates. When you perform the command listed across the top of the table against the category listed vertically, Directory Maintenance marks the entity or entities shown in the box as inconsistent. Commands or categories not in the table have no effect on the consistency of any entity.

The following table indicates when to use the Directory Maintenance Check command:

Category	Commands								
	ADD	CHANGE	COPY	DELETE	RELATE	RELATE CHANGE	REMOVE	RENAME	VARIABLE EDIT
Access Set (AS)	AS	AS LV	AS	LV	LV ¹		LV ¹		AS LV
Attribute (AT)	CS RE	CS RE		CS RE	CS ² RE ²		CS ² RE ²		
Buffer Pool (BP)	SC	SC		SC				SC	
Conceptual Schema (CS)	CS								
Environment Description (ED)	SC	SC	SC	SC	SC ³	SC ³	SC ³	SC	
File (FI)	SC FI	SC FI IR ⁶ SK ⁶	SC FI IR SK	SC	SC ³	SC ³	SC ³	SC FI IR SK	
Foreign Key (FK)	CS RE	CS RE		CS RE	CS ² RE ²		CS ² RE ²		
Internal Record (IR)	SC FI IR	SC FI IR		SC FI SK ⁸				SC FI IR SK ⁸	

Category	Commands								
	ADD	CHANGE	COPY	DELETE	RELATE	RELATE CHANGE	REMOVE	RENAME	VARIABLE EDIT
Key Code (KC)	SC FI SK			SC FI SK	SC ⁵ FI ⁵ SK ⁵	SC ⁵ FI ⁵ SK ⁵	SC ⁵ FI ⁵ SK ⁵		
Log Group (LG)	SC	SC		SC				SC	
Logical View (LV)	LV	LV	LV		LV ¹		LV ¹		
Physical View (PF)	SC FI IR	SC FI IR SK ⁷		SC FI IR	SC ⁵ FI ⁵ SK ^{5,7}	SC ⁵ FI ⁵ SK ^{5,7}	SC ⁵ FI ⁵ SK ^{5,7}	SC FI IR SK ⁷	
Relation (RE)	CS RE	CS RE	CS RE	CS					
Schema (SC)	SC								
Secondary Key (SK)	SC FI SK	SC FI SK	SC FI SK	SC FI	SC ⁴ FI ⁴ SK ⁴		SC ⁴ FI ⁴ SK ⁴	SC FI SK	

¹ Valid for the Access Set-to-Logical View relationship.

² Valid for the Attribute-to-Foreign Key relationship.

³ Valid for the Environment Description-to-File relationship.

⁴ Valid for the Secondary Key-to-File relationship.

⁵ Valid for the Key Code-to-Physical Field relationship.

⁶ Valid only if you change the file type.

⁷ Valid only if the Physical Field is related to a Key Code in this Secondary Key.

⁸ Valid only if the Secondary Key contains a Key Code with the same name as the Internal Record.

2

Using Run option definition statements

This chapter presents the Run option definition statements in alphabetical order. With the exception of the +SIGNON statement, use of these statements is optional. You can place some Run option definition statements before any command statements, and these remain in effect for the entire run. You can place other Run option definition statements between command statements, and these remain in effect until you change them. You cannot place Run option definition statements within the entity data records for a given command statement.

The following table lists the Run option definition statements, the purpose of each statement, and the position in which you place the statement:

Statement	Purpose	Submit
+ERRCONT	Continues execution with next command statement if Directory Maintenance detects an error in the current command statement.	Before first command statements. In effect for entire run.
+NODATA +DATA +PAGING +NOPAGING	Controls the content and format of output from Batch Directory Maintenance. Suppresses printing and controls page breaks.	Between command statements. In effect until changed.
+NULL	Specifies a character that will set a field in a command statement to blanks or zero.	Between command statements. In effect until changed.
+SEQUENCE +NOSEQUENCE	Checks sequence numbers in positions 73–80 on command statements.	Between command statements. In effect until changed.
+SIGNON	If valid, allows access to Batch Directory Maintenance.	Before first command statement. In effect for entire run.
+SYNTAX	Only checks the validity of command statements. The Directory is not updated.	Before first command statement. In effect for entire run.

Continue on Error option

The Continue on Error option controls Directory Maintenance error handling. If you code this option, Directory Maintenance continues processing with the next category at the same or higher level following an error. If you omit this option, Directory Maintenance stops processing after the first error and checks the syntax of remaining input.

+ERRCONT

Positions 1–8

Considerations

- ◆ This option remains in effect for the entire run.
- ◆ Submit this statement before any command statements.

Print Suppress option

The Print Suppress option controls the output produced by Directory Maintenance. If you code this option, Directory Maintenance prints only the input image list and any error or completion messages. If you omit the option, Directory Maintenance prints the input image list, any error or completion messages, and command execution information.

Format for Print Suppress option

+NODATA

Positions 1–7

Consideration The output includes the input statement image list and any messages.

Format to cancel Print Suppress option

+DATA

Positions 1–5

Considerations

- ◆ The output includes the input statement image list, any messages, and command execution information.
- ◆ This is the default value.

Eject option

The Eject option determines whether each transaction starts on a new page. A transaction consists of a command and its associated input records. A transaction can begin with a comment.

Format for Eject option

+PAGING

Positions 1–7

Considerations

- ◆ Each transaction is printed on a new page.
- ◆ This is the default value.

Format to cancel Eject option

+NOPAGING

Positions 1–9

Consideration Transactions are printed continuously.

Null Character Definition statement

The Null Character Definition statement specifies a character that, when encountered as the first character in a field, sets that field to zero or blanks, regardless of any default value. The null character sets optional numeric fields to zero and other fields to blanks. You can redefine the null character between any two commands, but you cannot change it within a command.

+NULL

Positions	1–5
<hr/>	
<i>null character</i>	
Position	7
Description	<i>Required.</i> Specifies any nonblank character.
Default	@
Consideration	Choose the null character so it does not conflict with other characters you use.

Sequence Number Checking option

The Sequence Number Checking option determines whether Directory Maintenance checks sequence numbers.

If you code this option, Directory Maintenance checks the sequence numbers in positions 73–80 on the command statements. Directory Maintenance ignores any blank sequence numbers. If the command statements are not in order, Directory Maintenance automatically activates the Syntax Check option (see “[Syntax Check option](#)” on page 84). The run continues, but the Directory is not updated. During the remainder of the run, Directory Maintenance checks statement syntax but ignores sequence numbers and any +SEQUENCE statements.

Format for Sequence Number Checking option

+SEQUENCE

Positions 1–9

Considerations

- ◆ Directory Maintenance checks sequence numbers on input statements.
- ◆ This is the default value.

Format to cancel Sequence Number Checking option

+NOSEQUENCE

Positions 1–11

Considerations

- ◆ Directory Maintenance does not check sequence numbers.
- ◆ You can turn off the Sequence Number Checking option between any two commands.

+SIGNON statement

The +SIGNON statement allows access to the Directory. In order to use the Batch Directory Maintenance facility, you must submit a +SIGNON statement containing a valid user ID and password before any command statements. Your user ID and password combination are defined during system installation. If this statement is invalid, Directory processing cannot be performed.

+SIGNON

Positions	1–7
Description	<i>Required.</i> Code this as shown.

dba-id

Positions	9–38
Description	<i>Required.</i> Identifies the DBA or authorized user.
Format	1–30 alphanumeric characters

Considerations

- ◆ DBA ID must begin in position 9.
- ◆ DBA ID must be defined in the Directory as a User with DBA capabilities.

password

Positions	40–69
Restriction	Required only if the Password Check option in the Directory Component Description is Y.
Description	<i>Conditional.</i> Specifies the assigned DBA password.
Format	1–30 alphanumeric characters

Considerations

- ◆ The password must begin in position 40.
- ◆ The password must be defined in the Directory with the DBA ID.

Example The following +SIGNON statement begins processing for a DBA named SENIOR with an assigned password of BATCHDIRECTORY:

```
000000000111111111222222222233333333333344444444445555555555666666666677777777778
12345678901234567890123456789012345678901234567890123456789012345678901234567890
+SIGNON SENIOR                                BATCHDIRECTORY
```

Syntax Check option

The Syntax Check option specifies that Directory Maintenance check all command statements for validity, but not update the Directory. If no syntax errors are found, Directory Maintenance prints the message “Syntax is valid” on the listing at the end of the run. If syntax errors are found, Directory Maintenance prints all syntax error messages. However, depending on the severity of error, full syntax checking of a particular statement may not be completed. For example, an error in the naming data causes the entire transaction to be invalid and Directory Maintenance ignores all associated input statements.



Directory Maintenance automatically activates the Continue On Error option during a syntax check run. See “[Continue on Error option](#)” on page 77.

Although syntax checking may indicate that all input obeys the syntax rules, conditions such as a change to the Directory before you execute your step or conflicting commands could result in an error. For example, although the syntax check would find no errors, an error would result during execution if you deleted a Schema at the start of a step and then tried to add files to that Schema in subsequent commands.

+SYNTAX

Positions 1–7

Considerations

- ◆ This option remains in effect for the entire run.
- ◆ Submit this statement before any command statements.

3

Maintaining Conceptual Schema data

This chapter presents the Directory Maintenance input statements used to maintain the Conceptual Schema data. These input statements are presented in alphabetical order by category and command within each category. Headers are included to help you quickly find the category and command you want to process.

The conceptual schema data categories are:

- ◆ Attribute
- ◆ Conceptual Schema
- ◆ Domain
- ◆ Foreign Key
- ◆ Relation

Directory Maintenance input statements

Code command statements as follows:

```
0000000001111111112222222223333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
cm ct xxxxxx yyyyyyy
```

where:

cm is the command code

ct is the category code

xxxxxx is an entity name or value

yyyyyyy is the optional sequence number

After you become familiar with the format of the command statements, use “[Command statement layouts](#)” on page 513 for quick reference of their general layout. That section graphically presents the command statements and fields that you code.

The considerations that follow apply to all input statements. You should be familiar with them before you begin coding data.

Naming data considerations

Naming data transactions specify the required qualifiers for the command statements within each category (see “[Audit listing](#)” on page 34). A naming data transaction contains only the category code in positions 4 and 5 and the name of the qualifying entity beginning in position 7. The qualifier name you enter, such as a schema or file name, becomes a sticky field and is carried over through all subsequent statements until changed. The qualifiers required as naming data are shown before the command statements for each category.

Command statement considerations

The first input statement for every command is in this standard format:

- ◆ positions 1–2 = command code
- ◆ positions 4–5 = category code
- ◆ positions 7–36= entity name

Naming conventions for an entity are shown with the ADD command for each category. For example, the first character must be alphabetic, #, \$, or -. Any other references to an entity name contain the description and format but not the conventions. The table in “[Naming data transactions](#)” on page 29 summarizes all naming conventions.

Once you enter the name of an entity, that name becomes a sticky field and is carried over through all subsequent statements until changed. Sticky fields are identified in the considerations for each applicable name by a statement similar to this: You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run. However, you can always name an entity again, even if it is already the value of a sticky field.

The field positions for most ADD and CHANGE commands are identical. When a field is blank for an ADD command and a default value is available, Directory Maintenance uses the default value. When a field is blank for a CHANGE command, the field retains any existing value.

You can use default values for many fields. Many default values are set during installation using special default entities. You can use Directory Maintenance to change these default values. “[Supplied default values](#)” on page 557 lists the initial values of these default entities. Other default values are derived from Directory Maintenance software. These default values are listed in this manual and cannot be changed.

A field that previously contained a value is automatically blanked if you place the special null character as the first nonblank character within the field (see “**Eject option**” on page 79). The default null character is @. For example, assume the Default Value field in positions 7–38 for a Physical Field contained a value. Entering the null character within that field would delete that value:

```
00011111111112222222222333333333
78901234567890123456789012345678
@
```

Entity name fields contain 30 positions and must not contain embedded blanks. If an entity name does not contain 30 characters, you can code the name in any position within the field. Similarly, you do not have to right or left justify data values as long as you position the value within the specified field. For example, the length of an External Field is coded in positions 7–11. If the length is 9, you can code 9 in any position in the field, as shown below:

```
00011
78901
9
```

In the format descriptions, fields are marked as follows:

- ◆ *Required.* Fields must contain a value; you can enter a value or accept a default value. Required fields cannot contain the null character. If you use the null character in a required field, an error will result.
- ◆ *Optional.* Fields can be blank.
- ◆ *Conditional.* Fields may be required or optional, depending on the value you enter in another field.

Attribute

The Attribute category defines the characteristics of the domains and relations associated to the Attribute.

The Attribute category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Attribute**” on page 92)
- ◆ RELATE (“**RELATE/REMOVE: Attribute**” on page 105)
- ◆ CHANGE (“**ADD/CHANGE: Attribute**” on page 92)
- ◆ REMOVE (“**RELATE/REMOVE: Attribute**” on page 105)
- ◆ DELETE (“**DELETE: Attribute**” on page 104)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)
- ◆ STRUCTURE DISPLAY (“**STRUCTURE DISPLAY: Attribute**” on page 109)

General consideration

Directory Maintenance uses the Domain to match each Attribute in the primary key to its corresponding Attribute in the Foreign Key. When the primary key or part of the primary key consists of multiple Attributes defined across the same Domain, all but one of the corresponding Attributes in the Foreign Key must have the same name (when n Attributes in the primary key are defined across the same Domain, then $n-1$ Attributes in the Foreign Key must have the same name as the corresponding Attributes in the primary key). Directory Maintenance matches the last Attribute by default.

Naming data transactions

Enter these statements only if you have not entered the naming data during this run.

```
0000000001111111112222222222333333333344444444445555555555666666666677777777778
12345678901234567890123456789012345678901234567890123456789012345678901234567890
CS conceptual schema
RE relation
```

Input statement 1

CS

Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

conceptual schema

Positions	7–36
Description	<i>Required.</i> Identifies an existing Conceptual Schema qualifying the Relation.
Format	1–30 alphanumeric or special characters (#, \$, -)

Input statement 2

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

relation

Positions	7–36
Description	<i>Required.</i> Identifies an existing Relation qualifying the Attribute.
Format	1–25 alphanumeric or special characters (#, \$, -)

ADD/CHANGE: Attribute

Use the following input statements to add or change an Attribute entity.

General considerations

- ◆ If you change the Attributes designated as the primary key in a Relation, you must also change the associated Foreign Keys to reflect these changes.
- ◆ If you change the following fields in the Attribute category, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent:
 - DATA FORMAT
 - SIGNED OPTION
 - EXTERNAL LENGTH
 - TRANSLATE EDIT NAME
 - FUNCTION
 - TRANSLATE EDIT SWITCH
 - NUMBER DECIMAL PLACES
 - UNIT
 - PRIMARY KEY
 - INPUT STATEMENT 1

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

AT

Positions	4–5
Description	<i>Required.</i> Specifies the Attribute category.

attribute

Positions	7–36
Description	<i>Required.</i> Identifies the Attribute being processed.
Format	1–25 alphanumeric or special characters (#, \$, -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Attribute name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters may be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ Each Attribute name must be unique within a Relation.

Input statement 2

domain

Positions	7–36
Description	<i>Optional.</i> Identifies an existing Domain to which you want to relate the Attribute.
Default	The Attribute name
Format	1–30 alphanumeric or special characters (#, \$, and -)

primary key

Position	38
Description	<i>Required.</i> Indicates whether the Attribute is part of the primary key for the Relation.
Options	Y Yes N No

Considerations

- ◆ This field is used during the Relation Consistency Check to define the Attributes comprising the primary key for the Relation.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

position

Positions	40–69
Description	<i>Conditional.</i> Required with the ADD command only. Specifies where to add the Attribute relative to the location of the other Attributes in the Relation.
Default	END.
Format	1–25 alphanumeric or special characters (#, \$, -)
Options	BEG. First Attribute within the Relation END. Last Attribute within the Relation <i>name</i> Name of the Attribute after which this Attribute is positioned
Consideration	If you enter an Attribute name, that Attribute must already exist in the Relation.

Input statement 3

function

Positions	7–36	
Description	<i>Optional.</i> Specifies the function of the Attribute.	
Options	AREA	TEMPERATURE
	DATE	TEMP
	DISTANCE	TIME
	MONEY	VELOCITY
	NUMBER	VOLUME
	PRESSURE	WEIGHT
	STRING	

Considerations

- ◆ If you enter a value, the value must be the same as the value of the Function field in the related Domain.
- ◆ If you do not enter a value, Directory Maintenance sets this field and the Unit field equal to the values specified for the related Domain. This occurs during the Consistency Check.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

unit

Positions	38–67
Description	<i>Conditional.</i> Required when you enter a value other than STRING or NUMBER for the Function field. Specifies the unit of the Function field.
Format	1–30 alphanumeric characters
Options	See “Unit field values” on page 549.

Considerations

- ◆ This value must be compatible with the value of the Function field.
- ◆ If you enter a value, you must also enter a value for the Function field.
- ◆ If you do not enter a value, Directory Maintenance sets this field equal to the value specified for the related Domain. This occurs during the Consistency Check.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

Input statement 4

data format

Position	7
Description	<i>Optional.</i> Indicates the data format of the Attribute.
Options	B Binary C Character F Floating point K Kanji P Packed decimal Z Zoned decimal

Considerations

- ◆ If you enter a value, you must also enter values for the External Length, Number Decimal Places, and Signed Option fields.
- ◆ If you enter a value, this value must be compatible with the value of the Data Format field in the related Domain.
- ◆ If you do not enter a value, Directory Maintenance sets this field and the External Length, Number Decimal Places, and Signed Option fields equal to the values specified for the related Domain. This occurs during the Consistency Check.
- ◆ Directory Maintenance treats Kanji data as a special form of character string. The value of the External Length field must be a multiple of 2.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

external length

Positions 9–13

Description *Optional.* Indicates the external length of the data.

Format 1–5 numeric characters

Considerations

- ◆ This value depends on the data format specified, and whether or not a MANTIS program uses this field. Valid values are:

Data format	Directory limits	MANTIS limits
B	1, 2, 4, or 8	2 or 4
C	1–32,767	1–254
F	4, 8, or 16	4 or 8
K	2–32, –766 (multiple of 2)	2–254 (multiple of 2)
P	1–16	1–8
Z	1–18	1–18
If using RDM:	1–15	1–15

- ◆ If you enter a value, you must also enter values for the Data Format, Number Decimal Places, and Signed Option fields.
- ◆ If you do not enter a value or if you enter 0, Directory Maintenance sets this field and the Number Decimal Places, Data Format, and Signed Option fields equal to the value specified for the related Domain. This occurs during the Consistency Check.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

number decimal places

Positions 15–16**Restriction** Meaningful only if the value of the Data Format field is B, P, or Z.**Description** *Optional.* Indicates the number of decimal places in a numeric field.**Format** 1–2 numeric characters**Considerations**

- ◆ Use a value that is valid for the External Length field.
- ◆ If you enter a value, you must also enter values for the Data Format, External Length, and Signed Option fields.
- ◆ If you do not enter a value or if you enter 0, Directory Maintenance sets this field and the External Length, Data Format, and Signed Option fields equal to the values specified for the related Domain. This occurs during the Consistency Check.
- ◆ If Data Format field is K, Directory Maintenance sets this field to 0.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

signed option

Position	18
Description	<i>Required.</i> Indicates whether the numeric data is signed for use by RDM programs and SQL applications .
Options	Y Yes N No

Considerations

- ◆ If you enter a value, you must also enter values for the Data Format, External Length, and Number Decimal Places fields.
- ◆ If you do not enter a value, Directory Maintenance sets this field and the External Length, Data Format, and Number Decimal Places fields equal to the value specified for the related Domain. This occurs during the Consistency Check.
- ◆ For signed fields, the sign nibble must be C for positive, D for negative. For unsigned fields the sign nibble must be F. PDM does not enforce this, but incorrect results will be produced by RDM and SQL applications using the data that does not follow the rule.
- ◆ RDM and SQL will use a sign nibble of F for unsigned data, and C or D for signed data.

length of edited field

Positions	20–24
Description	<i>Conditional.</i> Required when you enter a value for the Translate/Edit Name field. Indicates the length of the edited field.
Format	1–5 numeric characters

translate/edit switch

Position	26
Description	<i>Conditional.</i> Required when you enter a value for the Translate/Edit Name field. Indicates whether the Translate/Edit Name field contains an Edit Mask name or translate table name.
Options	T Translate table E Edit mask
Considerations	<ul style="list-style-type: none">◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Attribute is Kanji, Directory Maintenance ignores data entered in this field.◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

translate/edit name

Positions	28–57
Description	<i>Conditional.</i> Required when you enter a value for the Translate/Edit Switch field. Indicates the name of the Edit Mask or translate table.
Format	1–30 alphanumeric characters
Considerations	<ul style="list-style-type: none">◆ The named Edit Mask or translate table must exist on the Directory.◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Attribute is Kanji, Directory Maintenance ignores data entered in this field.◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

Input statement 5

print heading

Positions 7–36

Description *Optional.* Specifies the heading Comprehensive Retrieval is to print on reports.

Format 1–30 alphanumeric characters

Considerations

- ◆ Use a semicolon (;) in the Print Heading definition to indicate a line break. Because the semicolon functions as a delimiter, do not use it as a character within the Print Heading field.
- ◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Attribute is Kanji, Directory Maintenance ignores data entered in this field.

data translation exit

Positions 38–45

Description *Optional.* Specifies the name of the exit program called by RDM to translate data for special requirements.

Format 1–8 alphanumeric characters

Consideration Use standard, operating-system-naming conventions.

DELETE: Attribute

Use the following input statement to delete an Attribute entity.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

AT

Positions	4–5
Description	<i>Required.</i> Specifies the Attribute category.

attribute

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Attribute being deleted
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Attribute name entered during this run.

RELATE/REMOVE: Attribute

Use the following input statements to establish or remove relationships between an Attribute and its associated External Fields and Foreign Keys. To list an Attribute's relationships, use the STRUCTURE DISPLAY command described in "[STRUCTURE DISPLAY: Attribute](#)" on page 109.

This section includes the Attribute/External Fields and Attribute/Foreign Keys relationships. The input statements for each subcategory are described separately.

Attribute/External Fields relationship

Use the following input statements to establish or remove the relationship between an Attribute and its associated External Fields.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

AT

Positions	4–5
Description	<i>Required.</i> Specifies the Attribute category.

attribute

Positions	7–36
Description	<i>Required.</i> Identifies the Attribute for which the relationship is being maintained.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Attribute name entered during this run.

Input statement 2

XF

Positions	7–8
Description	<i>Required.</i> Specifies the External Field subcategory for the relationship.

qualifying schema

Positions	10–39
Description	<i>Required.</i> Specifies the schema qualifying the External Field related to this Attribute.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding schema name entered during this run.
 - ◆ The schema must already be related to the Attribute’s qualifying Relation and the Relation’s qualifying Conceptual Schema.
-

external field

Positions	41–70
Description	<i>Required.</i> Specifies ALL. or the name of the External Field related to this Attribute.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding External Field name entered during this run.
- ◆ With the RELATE command, ALL. relates each existing External Field not already related to the Attribute.
- ◆ With the REMOVE command, ALL. deletes all existing relationships between the Attribute and the associated External Fields.
- ◆ If you specify ALL. with the RELATE command, use the STRUCTURE DISPLAY command to verify the External Field names.

Attribute/Foreign Keys relationship

Use the following input statements to establish or remove the relationship between an Attribute and its associated Foreign Keys.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

AT

Positions	4–5
Description	<i>Required.</i> Specifies the Attribute category.

attribute

Positions	7–36
Description	<i>Required.</i> Identifies the Attribute for which the relationship is being maintained.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Attribute name entered during this run.

Input statement 2

FK

Positions	7–8
Description	<i>Required.</i> Specifies the Foreign Key subcategory for the relationship.

foreign key

Positions	10–39
Description	<i>Required.</i> Specifies ALL. or the name of the Foreign Key related to this Attribute.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Foreign Key name entered during this run.
- ◆ With the RELATE command, ALL. relates all Foreign Keys in the Attribute’s qualifying relation that are not already related to the Attribute.
- ◆ With the REMOVE command, ALL. deletes all existing relationships between the Attribute and its associated Foreign Keys.
- ◆ If you specify ALL. with the RELATE command, use the STRUCTURE DISPLAY command to verify the Foreign Key names.
- ◆ The Attribute and the Foreign Key must be qualified by the same relation.

Attribute/Users relationship

This function is not applicable to this release. Directory Maintenance allows the definition, but RDM does not use it.

STRUCTURE DISPLAY: Attribute

Use the following input statements to list the Attribute's associated external fields and foreign keys. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

AT	
Positions	4–5
Description	<i>Required.</i> Specifies the Attribute category.

attribute	
Positions	7–36
Description	<i>Required.</i> Specifies the Attribute name.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Attribute name entered during this run.

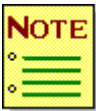
Input statement 2

subcategory code	
Positions	7–8
Description	<i>Required.</i> Indicates whether to show the structure using External Fields, Foreign Keys, or Users.
Options	XF External Field FK Foreign Key
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

Conceptual Schema

The Conceptual Schema category is a collection of Relations that define the database in general, relational terms. The Conceptual Schema category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/DELETE: Conceptual Schema**” on page 111)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)
- ◆ CHECK (“**CHECK: Conceptual Schema**” on page 112)
- ◆ RELATE (“**RELATE/REMOVE: Conceptual Schema**” on page 116)
- ◆ COPY (“**COPY: Conceptual Schema**” on page 114)
- ◆ REMOVE (“**RELATE/REMOVE: Conceptual Schema**” on page 116)
- ◆ DELETE (“**ADD/DELETE: Conceptual Schema**” on page 111)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ STRUCTURE DISPLAY (“**STRUCTURE DISPLAY: Conceptual Schema**” on page 118)



A Conceptual Schema entity does not require a naming data transaction.

ADD/DELETE: Conceptual Schema

Use the following input statements to add or delete a Conceptual Schema entity.

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add DE Delete

CS

Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

conceptual schema

Positions	7–36
Description	<i>Required.</i> Identifies the Conceptual Schema being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ This name cannot be the same as the name of another unqualified entity: a Directory Component Description, Domain, Edit Mask, Reserved Word, Schema, Security Group, Table, User, or another Conceptual Schema.

CHECK: Conceptual Schema

Use the following input statements to perform a Consistency Check on a Conceptual Schema.

If you do not define a Foreign Key for a Relation that contains Attributes defined across the same Domain as a primary key in another Relation, a Conceptual Schema Consistency Check automatically creates potential Foreign Keys.

Input statement 1

CK	
Positions	1–2
Description	<i>Required.</i> Specifies the CHECK command.

CS	
Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

<i>conceptual schema</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the Conceptual Schema being Consistency Checked.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.

Input statement 2

check all relations

Position	7
Restriction	Do not enter N for both this field and the Check Inconsistent Relations field.
Description	<i>Optional.</i> Indicates whether to Consistency Check all Relations even if they have been previously checked and marked consistent.
Default	N
Options	Y Yes N No

check inconsistent relations

Position	9
Restriction	Do not enter N for both this field and the Check All Relations field.
Description	<i>Optional.</i> Indicates whether to Consistency Check only inconsistent Relations.
Default	Y
Options	Y Yes N No

COPY: Conceptual Schema

Use the following input statements to copy all Conceptual Schema information from one Conceptual Schema (source) to another Conceptual Schema (target).

When you copy a Conceptual Schema, Directory Maintenance duplicates all entities qualified by the source Conceptual Schema in the target Conceptual Schema along with their relationships. However, Directory Maintenance does not copy any source Conceptual Schema-to-Schema, Relation-to-Schema, and Attribute-to-External Field relationships. The consistency of the target Conceptual Schema is the same as the source Conceptual Schema.

Input statement 1

CO	
Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

CS	
Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

<i>source conceptual schema</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the Conceptual Schema you want to copy.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.

Input statement 2

target conceptual schema

Positions	7–36
Restriction	This name must not already exist.
Description	<i>Required.</i> Specifies the name of the new Conceptual Schema.
Format	1–30 alphanumeric or special characters (#, \$, and -)

RELATE/REMOVE: Conceptual Schema

Use the following input statements to establish or remove a relationship between a Conceptual Schema and its associated schemas. To list a Conceptual Schema's relationships, use the STRUCTURE DISPLAY command described in "STRUCTURE DISPLAY: Conceptual Schema" on page 118.

When you remove a Conceptual Schema-to-Schema relationship, Directory Maintenance also removes any Relation-to-Schema relationships for each applicable entity within the selected Schema.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

CS

Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

conceptual schema

Positions	7–36
Description	<i>Required.</i> Identifies the Conceptual Schema being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.

Input statement 2

SC

Positions	7–8
Description	<i>Required.</i> Specifies the schema subcategory for the relationship.

related schema

Positions	10–39
Description	<i>Required.</i> Specifies ALL. or the name of the related schema.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding schema name entered during this run.
- ◆ ALL. is not valid with the RELATE command. With the REMOVE command, ALL. deletes all existing relationships between the Conceptual Schema and its associated schemas.

STRUCTURE DISPLAY: Conceptual Schema

Use the following input statements to list the Conceptual Schema's associated Relations and Schemas. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

CS	
Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

conceptual schema	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the Conceptual Schema.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.

Input statement 2

subcategory code	
Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	RE Relation SC Schema
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

Domain

The Domain category defines all possible values of an Attribute. It specifies the function of the entity and provides validation options. The Domain category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Domain**” on page 120)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)
- ◆ CHANGE (“**ADD/CHANGE: Domain**” on page 120)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ DELETE (“**DELETE: Domain**” on page 129)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ STRUCTURE DISPLAY (“**STRUCTURE DISPLAY: Domain**” on page 130)



A Domain entity does not require a naming data transaction.

ADD/CHANGE: Domain

Use the following input statements to add or change a Domain entity.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

DM

Positions	4–5
Description	<i>Required.</i> Specifies the Domain category.

domain

Positions	7–36
Description	<i>Required.</i> Identifies the Domain being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Domain name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the last character cannot be a hyphen.
- ◆ This name cannot be the same as the name of another unqualified entity: a Conceptual Schema, Directory Component Description, Edit Mask, Reserved Word, Schema, Security Group, Table, User, or another Domain.

Input statement 2

data format

Position	7
Description	<i>Required.</i> Specifies the stored format of the data contained in the Domain.
Options	B Binary K Kanji C Character P Packed decimal F Floating point Z Zoned decimal
Consideration	Directory Maintenance treats a Data Format of Kanji as a special form of character string. The value of the Length field must be a multiple of 2.

function

Positions	9–38
Description	<i>Required.</i> Specifies the function of the Domain.
Format	1–30 alphanumeric characters
Options	AREA PRESSURE VELOCITY DATE STRING VOLUME DISTANCE TEMP WEIGHT MONEY TEMPERATURE NUMBER TIME

unit

Positions	40–69
Description	<i>Conditional.</i> Required when you enter a value other than STRING or NUMBER for the Function field. Specifies the unit of the function.
Format	1–30 alphanumeric characters
Options	See “Unit field values” on page 549.
Consideration	The value of the Unit field must be valid for the specified function.

Input statement 3

length

- Positions** 7–11
- Description** *Required.* Indicates the stored length of the Domain.
- Format** 1–5 numeric characters
- Consideration** This value depends on the data format specified, and whether or not a MANTIS program uses this field. Valid values are:

Data format	Directory limits	MANTIS limits
B	1, 2, 4, or 8	2 or 4
C	1–32,767	1–254
F	4, 8, or 16	4 or 8
K	2–32,766 (multiple of 2)	2–254 (multiple of 2)
P	1–16	1–8
Z	1–18	1–18
If using RDM:	1–15	1–15

number of decimal places

- Positions** 13–14 number decimal places
- Description** *Conditional.* Required when the Data Format field is B, P, or Z. Indicates the number of decimal places in a numeric field.
- Format** 1–2 numeric characters
- Considerations**
- ◆ Use a value that is valid for the Length field.
 - ◆ If the Data Format field is C, F, or K, Directory Maintenance sets this field to 0.

signed option

Position	16
Description	<i>Required.</i> Indicates whether numeric data is signed.
Options	Y Yes N No
Consideration	If the Data Format field is C or K, Directory Maintenance sets this field to N. If the Data Format field is F, Directory Maintenance sets this field to Y.

retrieval validation option

Position	18
Description	<i>Required.</i> Indicates whether the RDM is to validate data when a GET command is issued.
Options	Y Yes N No
Considerations	<ul style="list-style-type: none">◆ If you enter Y, you must enter a value in the Validation Option field.◆ If you enter N and you enter E, R, or T in the Validation Option field, the RDM will return all data, including data that does not meet the validation requirements defined in a validation exit, range, or Table.

default value

Positions	20–51
Description	<i>Optional.</i> Specifies the default value you want to use for the Domain.
Format	1–32 alphanumeric characters

Considerations

- ◆ This value must be specified in the data format and length defined for this Domain.
- ◆ If the data format is Binary, Packed Decimal, Zoned Decimal, or Floating Point, do not use embedded blanks.
- ◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Domain is Kanji, Directory Maintenance ignores data entered.

validation option

Position	53
Description	<i>Optional.</i> Specifies whether the validation option will call an exit, use a specified range, or use table values.
Options	E Exit R Range T Table b No validation

Considerations

- ◆ When the data format of the Domain is Kanji, Directory Maintenance ignores data entered.
- ◆ If you enter a value, you must set the Retrieval Validation Option field to Y.

Input statement 4

validation minimum

Positions 7–38

Description *Conditional.* Required when the Validation Option field is R. Specifies the minimum value used to validate the data represented by this entity.

Format 1–32 alphanumeric characters

Considerations

- ◆ If you enter a value, you must also enter a value in the Validation Maximum field.
- ◆ Enter the value in the data format and length defined for this Domain. If the data type is Binary, Packed Decimal, or Zoned Decimal, it must also conform to the number of decimal places.
- ◆ If the data format is Binary, Packed Decimal, Zoned Decimal, or Floating Point, do not use embedded blanks.
- ◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Domain is Kanji, Directory Maintenance ignores data entered.

validation maximum

Positions 40–71

Description *Conditional.* Required when the Validation Option field is R. Specifies the maximum value used to validate the data represented by this entity.

Format 1–32 alphanumeric characters

Considerations

- ◆ If you enter a value, you must also enter a value for the Validation Minimum field.
- ◆ Enter the value in the data format and length defined for this Domain. If the data type is Binary, Packed Decimal, or Zoned Decimal, it must also conform to the number of decimal places.
- ◆ If the data format is Binary, Packed Decimal, Zoned Decimal, or Floating Point, do not use embedded blanks.
- ◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Domain is Kanji, Directory Maintenance ignores data entered.

Input statement 5

validation table

Positions	7–36
Description	<i>Conditional.</i> Required when the Validation Option field is T. Identifies the name of the Table used to validate the data represented by this entity
Format	1–30 alphanumeric characters
Considerations	<ul style="list-style-type: none">◆ If you enter a name, the Table must be defined on the Directory.◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Domain is Kanji, Directory Maintenance ignores data entered.

validation exit

Positions	38–45
Description	<i>Conditional.</i> Required when the Validation Option field is E. Specifies the name of the exit you want to call for data validation.
Format	1–8 alphanumeric characters
Considerations	<ul style="list-style-type: none">◆ Use standard, operating-system-naming conventions.◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Domain is Kanji, Directory Maintenance ignores data entered.

Input statement 6

nulls allowed option

Position	7
Description	<i>Required.</i> Indicates whether the Domain can contain a null value.
Options	Y Yes N No

null value

Positions	9–40
Description	<i>Optional.</i> Specifies the null value you want to use for the Domain
Default	See the second consideration below.
Format	1–32 alphanumeric characters

Considerations

- ◆ If you enter a value, you must enter Y in the Nulls Allowed Option field.
- ◆ If the Nulls Allowed Option field is Y and you do not enter a value, Directory Maintenance sets a default null value based on the data format of the Domain or Physical Field:

Data format	Default null value
Character	Blanks
Binary	Negative zero according to Length (example: 2 = X'8000')
Packed Decimal	Blanks
Zoned Decimal	Blanks
Floating Point	X'FF' in each byte
Kanji	Blanks

- ◆ Hexadecimal data is allowed regardless of the format. To specify hexadecimal data, use the format X'aa...aa' where X'...' is the hexadecimal indicator and 'aa...aa' must be an even number of characters (0–9 and A–F only). The number of characters divided by 2 must not exceed the length of the Domain or Physical Field.
- ◆ Data not specified as hexadecimal must conform to the data format and length of the Domain and Physical Field.
- ◆ Do not use embedded blanks.
- ◆ If the data type is Binary, Packed Decimal, or Zoned Decimal, and you specify the decimal point in the data value, you may use only one decimal point. The number of digits following the decimal point must be less than or equal to the number of decimal places parameter.
- ◆ The Directory stores this value left justified as a character string. Any remaining positions in the field are filled with blanks.
- ◆ If you enter a null value for a numeric field (Binary, Packed Decimal, or Zoned Decimal) and the value is shorter than the specified Length, RDM fills the null field with binary zeros to the left of the value. The sign will be set according to the specified Signed Option.

DELETE: Domain

Use the following input statement to delete a Domain entity. You cannot delete a Domain if it is related to any Attributes. Therefore, before you delete a Domain, you must either change the Domain specified for any related Attributes or delete the Attributes.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

DM

Positions	4–5
Description	<i>Required.</i> Specifies the Domain category.

domain

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Domain being deleted.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Domain name entered during this run.

STRUCTURE DISPLAY: Domain

Use the following input statements to list the Attributes related to a Domain. The list also shows the Conceptual Schema and Relation that qualify an Attribute. Attributes are listed in the sequence they were added to the Relation. The Conceptual Schemas, Relations, and Attributes are indented to show hierarchy.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

DM	
Positions	4–5
Description	<i>Required.</i> Specifies the Domain category.

<i>domain</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the Domain.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Domain name entered during this run.

Input statement 2

AT	
Positions	7–8
Description	<i>Required.</i> Specifies the Attribute subcategory for this structure display.

Foreign Key

The Foreign Key category identifies the Attribute or combination of Attributes in one Relation that are defined across the same Domains as the Attribute(s) that compose the primary key in the same or another Relation.

The Foreign Key category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Foreign Key**” on page 134)
- ◆ RELATE (“**RELATE/REMOVE: Foreign Key**” on page 139)
- ◆ CHANGE (“**ADD/CHANGE: Foreign Key**” on page 134)
- ◆ REMOVE (“**RELATE/REMOVE: Foreign Key**” on page 139)
- ◆ DELETE (“**DELETE: Foreign Key**” on page 138)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ DISPLAY (“**DISPLAY**” on page 492)
- ◆ SHORT EDIT (“**SHORT EDIT**” on page 507)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ SHORT TEXT (“**SHORT TEXT**” on page 510)
- ◆ LONG TEXT (“**LONG TEXT**” on page 502)
- ◆ STRUCTURE DISPLAY (“**STRUCTURE DISPLAY: Foreign Key**” on page 141)

General considerations

- ◆ Directory Maintenance uses the Domain to match each Attribute in the primary key to its corresponding Attribute in the Foreign Key. When the primary key or part of the primary key consists of multiple Attributes defined across the same Domain, all but one of the corresponding Attributes in the Foreign Key must have the same name (when n Attributes in the primary key are defined across the same Domain, then $n-1$ Attributes in the Foreign Key must have the same name as the corresponding Attributes in the primary key). Directory Maintenance matches the last Attribute by default.
- ◆ For information on how to add a Foreign Key, refer to *the SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

Naming data transaction

Enter these statements only if you have not entered the naming data during this run.

```
0000000001111111112222222223333333334444444455555555666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
CS conceptual schema
RE relation
```

Input statement 1

CS

Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

conceptual schema

Positions	7–36
Description	<i>Required.</i> Identifies an existing Conceptual Schema qualifying the Relation.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Input statement 2

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

relation

Positions	7–36
Description	<i>Required.</i> Identifies an existing Relation qualifying the Foreign Key.
Format	1–25 alphanumeric or special characters (#, \$, and -)

ADD/CHANGE: Foreign Key

Use the following input statements to add or change a Foreign Key entity.

General consideration

If you change the CLUSTERED OPTION field and/or the CHAINED OPTION field in the Foreign Key category, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent:

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

FK

Positions	4–5
Description	<i>Required.</i> Specifies the Foreign Key category.

foreign key

Positions	7–36
Description	<i>Required.</i> Specifies the Foreign Key being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Foreign Key name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters may be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ Each Foreign Key name must be unique within a Relation.
- ◆ The name of the Foreign Key should be the same as the name of the primary key's Relation.

Input statement 2

primary key relation

Positions 7–36

Description *Optional.* Specifies the Relation that contains the primary key for this Foreign Key.

Format 1–25 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Relation name entered during this run.
- ◆ This field establishes the primary key to Foreign Key relationship.
- ◆ If you do not enter a Relation name, the Consistency Check generates an error.
- ◆ This Relation must already exist.

foreign key type

- Positions

38–57
- Description

Required. Identifies the type of Foreign Key for the associated Relation.
- Options

E or ESSENTIAL

A or ASSIGNED

D or DESCRIPTOR

I or IGNORE
- Consideration

This value depends on the Relation type (see “**ADD/CHANGE: Relation**” on page 144):

Relation type	Foreign Key type	Consideration
Independent Entity (IE)	E	Invalid
	A	0–n allowed
	D	0–n allowed
	I	0–n allowed
Dependent Entity (DE)	E	1 required and allowed
	A	0–n allowed
	D	0–n allowed
	I	0–n allowed
Relationship (R)	E	If only one Foreign Key, it must refer to another relationship Relation or If more than one Foreign Key, they may refer to any type of Relation.
	A	0–n allowed
	D	0–n allowed
	I	0–n allowed

clustered option

Position 59

Description *Required.* Specifies whether the rows in the Relation should be stored physically in close proximity to one another, based on the value of the Foreign Key.

Options Y Yes
N No

Considerations

- ◆ If you specify any Foreign Keys in a Relation as chained, specify one, and only one, Foreign Key as clustered.
- ◆ If you specify the Foreign Key as clustered, do not specify it as chained.
- ◆ If you enter Y, and Y is not valid for the Relation, Directory Maintenance changes the option to N during the Consistency Check.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

chained option

Position 61

Description *Required.* Specifies whether the rows in the Relation should be linked to other rows having the same value in the Foreign Key.

Options Y Yes
N No

Considerations

- ◆ If you specify any Foreign Keys in a Relation as chained, specify one Foreign Key as clustered.
- ◆ If you specify the Foreign Key as chained, do not specify it as clustered.
- ◆ If you enter Y, and Y is not valid for the Relation, Directory Maintenance changes the option to N during the Consistency Check.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

DELETE: Foreign Key

Use the following input statement to delete a Foreign Key entity

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

FK

Positions	4–5
Description	<i>Required.</i> Specifies the Foreign Key category.

foreign key

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Foreign Key being deleted.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Foreign Key name entered during this run.

RELATE/REMOVE: Foreign Key

Use the following input statements to establish or remove a relationship between a Foreign Key and its associated Attributes. To list a Foreign Key's relationships, use the STRUCTURE DISPLAY command described in "[STRUCTURE DISPLAY: Foreign Key](#)" on page 141.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

FK

Positions	4–5
Description	<i>Required.</i> Specifies the Foreign Key category.

foreign key

Positions	7–36
Description	<i>Required.</i> Specifies the Foreign Key being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Foreign Key name entered during this run.

Input statement 2

AT

Positions	7–8
Description	<i>Required.</i> Specifies the Attribute subcategory for the relationship.

related attribute

Positions	10–39
Description	<i>Required.</i> Specifies ALL. or the name of the related Attribute.
Format	1–25 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Attribute name entered during this run.
- ◆ With the RELATE command, ALL. relates each existing Attribute not already related to a Foreign Key. With the REMOVE command, ALL. deletes all existing relationships between the Foreign Key and its associated Attributes.
- ◆ If you specify ALL. with the RELATE command, use the STRUCTURE DISPLAY command to verify the Attribute names.

STRUCTURE DISPLAY: Foreign Key

Use the following input statements to list the Attributes related to a Foreign Key and the related Domain for each Attribute. Attributes are listed in the sequence in which they were related to the Foreign Key

Input statement 1

SD

Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

FK

Positions	4–5
Description	<i>Required.</i> Specifies the Foreign Key category.

foreign key

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Foreign Key.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Foreign Key name entered during this run.

Input statement 2

AT

Positions	7–8
Description	<i>Required.</i> Specifies the Attribute subcategory for this structure display.

Relation

A Relation category is a collection of Attributes that define a two-dimensional table within the relational database. The Relation category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/CHANGE: Relation” on page 144)
- ◆ RELATE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Relation” on page 153)
- ◆ CHANGE (“ADD/CHANGE: Relation” on page 144)
- ◆ RELATIONSHIP CHANGE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Relation” on page 153)
- ◆ CHECK (“CHECK/DELETE: Relation” on page 150)
- ◆ RELATIONSHIP DISPLAY (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Relation” on page 153)
- ◆ COPY (“COPY: Relation” on page 151)
- ◆ REMOVE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Relation” on page 153)
- ◆ DELETE (“CHECK/DELETE: Relation” on page 150)
- ◆ RENAME (“RENAME” on page 504)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: Relation” on page 161)

Naming data transaction

Enter this statement only if you have not entered the naming data during this run.

```
0000000001111111112222222223333333334444444455555555666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
CS conceptual schema
```

CS

Positions	4–5
Description	<i>Required.</i> Specifies the Conceptual Schema category.

conceptual schema

Positions	7–36
Description	<i>Required.</i> Identifies an existing Conceptual Schema qualifying the Relation.
Format	1–30 alphanumeric or special characters (#, \$, and -)

ADD/CHANGE: Relation

Use the following input statements to add or change a Relation entity.

General consideration

If you change the following fields in the Relation category, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent:

- ◆ DDNAME
- ◆ EXTENSION
- ◆ FILE NAME
- ◆ RELATION TYPE
- ◆ SUBTYPE

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

relation

Positions	7–36
Description	<i>Required.</i> Identifies the Relation being processed.
Format	1–25 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Relation name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ This name cannot be a Reserved Word.
- ◆ Each Relation name must be unique and within a Conceptual Schema.

Input statement 2

number of tuples

Positions	7–16
Description	<i>Required.</i> Specifies the total number of occurrences for this Relation on the physical storage device.
Format	1–10 numeric characters
Options	2–2147483647
Consideration	During generation, this value becomes the value for the Total Logical Records in the File entity. The File entity will contain at least the number of rows specified here. However, the value may automatically be rounded up depending on the physical device, blocks per track, records per block, and so on used in the File entity.

relation type

Positions	18–37
Description	<i>Required.</i> Identifies the Relation type.
Options	IE or INDEPENDENT ENTITY DE or DEPENDENT ENTITY R or RELATIONSHIP

Considerations

- ◆ If the Relation Type field is IE, the Relation must be capable of existing without dependence on another Relation. Therefore, there cannot be any essential Foreign Keys for the Relation.
- ◆ If the Relation Type field is DE, the Relation must be dependent on an independent entity Relation or another dependent entity Relation. There must be one, and only one, essential Foreign Key for the Relation, and that essential Foreign Key must refer to the Relation on which this Relation is dependent.
- ◆ If the Relation Type field is R, the Relation must have one or more essential Foreign Keys. If there is only one essential Foreign Key, that Foreign Key must refer to a relationship Relation. If there are multiple Foreign Keys, the referenced Relations may be of any type (relationship, independent entity, or dependent entity).
- ◆ For all types of Relations, you may define assigned, descriptor, and ignore Foreign Keys (see [“ADD/CHANGE: Foreign Key”](#) on page 134 for more information on defining Foreign Keys).
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

subtype

Position	39
Description	<i>Required.</i> Specifies whether the Relation is a special subclass of a dependent entity Relation or relationship Relation.
Options	Y Yes N No

Considerations

- ◆ If you enter Y, the Relation Type field must be either dependent entity or relationship.
- ◆ If you enter a value, do not enter a value for the Extension field.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

extension

Position	41
Description	<i>Required.</i> Specifies whether the Relation is a special subclass of a dependent entity Relation or relationship Relation.
Options	Y Yes N No

Considerations

- ◆ If you enter Y, the Relation type must be either dependent entity or relationship.
- ◆ If you enter a value, do not enter a value for the Subtype field.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

file name	Positions	43–72	Not applicable to this release.
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Input statement 3

ordered primary key

Position	7
Description	<i>Required.</i> Specifies whether there will be a mechanism to retrieve the Relation's rows in a sequence based on the primary key.
Options	Y Yes N No

ddname

Positions	9–16
Description	<i>Optional.</i> Indicates the ddname of the file.
Default	File name
Format	OS/390 1–8 alphanumeric characters VSE 1–7 alphanumeric characters

Considerations

- ◆ Use standard, operating-system-naming conventions.
- ◆ If you do not enter a value, Directory Maintenance sets this field to the file name.
- ◆ Directory Maintenance moves this field to the file entity during generation.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Relation, and Conceptual Schema inconsistent.

data set name

Positions	18–61
Description	<i>Optional.</i> Indicates the OS/390 dsname or the VSE DLBL name of the file.
Format	1–44 alphanumeric characters

Considerations

- ◆ Use standard, operating-system-naming conventions.
- ◆ This field is moved to the file entity during generation.

CHECK/DELETE: Relation

Use the following input statement to perform a Consistency Check or to delete a Relation.

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	CK Perform Consistency Check DE Delete

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

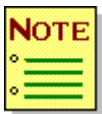
relation

Positions	7–36
Description	<i>Required.</i> Identifies the Relation being processed.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Relation name entered during this run.

COPY: Relation

Use the following input statements to copy an existing Relation from one Conceptual Schema (source) to another Conceptual Schema (target). The source and target Conceptual Schemas may be the same.

When you copy a Relation, Directory Maintenance copies its primary key, Foreign Keys, and Attributes along with their relationships.



The primary key to Foreign Key relationships are copied only if the Foreign Key already exists in the target Conceptual Schema and is not related to another primary key. If the source and target Conceptual Schema are the same, the primary key in the Relation is not related to any Foreign Keys, but the Foreign Keys in the Relation are related to the appropriate primary keys.

Input statement 1

CO

Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

source relation

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Relation you want to copy.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Relation name entered during this run.

Input statement 2

target conceptual schema

Positions	7–36
Description	<i>Required.</i> Identifies the Conceptual Schema to which you want to copy the Relation.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.

target relation

Positions	38–67
Description	<i>Required.</i> Specifies the name of the new Relation.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Considerations	<ul style="list-style-type: none">◆ You do not need to enter this name if it is the same as the preceding Relation name entered during this run.◆ If the source and target Conceptual Schemas are the same, this Relation name must not be the same as the source Relation name.

**RELATE/RELATIONSHIP CHANGE/RELATIONSHIP
DISPLAY/REMOVE: Relation**

Use the following input statements to establish or remove a relationship between a Relation and its associated Internal Records, Schemas, and Users. You may also change or print the User relationships. To list a Relation's relationships, use the STRUCTURE DISPLAY command described in "STRUCTURE DISPLAY: Relation" on page 161.

This section includes the Relation/Internal Records, Relation/Schemas, and Relation/Users relationships. The input statements for each subcategory are described separately.

Relation/Internal Records relationship

Use the following input statements to establish or remove the relationship between the Relation and its associated Internal Records.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

relation

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Relation for which the relationship is being maintained.
Format	1–25 alphanumeric or special characters (#, \$, and -)

Input statement 2

IR

Positions	7–8
Description	<i>Required.</i> Specifies the Internal Record subcategory for the relationship.

schema

Positions	10–39
Description	<i>Required.</i> Identifies the schema qualifying the File.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	The schema must already be related to the Relation and Conceptual Schema qualifying the Relation.

file

Positions	41–70
Description	<i>Required.</i> Identifies the file qualifying the Internal Record.
Format	4 alphanumeric or special characters (#, \$, @, and -)

Input statement 3

internal record

Positions 7–36

Description *Required.* Specifies the name of the Internal Record related to this Relation. ALL. may be specified for the REMOVE command (see the third item under Considerations).

Format BASE. or 2 alphanumeric or printable special characters.

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Internal Record name entered during this run.
- ◆ The Schema qualifying the File that qualifies this Internal Record must already be related to this Relation and its qualifying Conceptual Schema.
- ◆ ALL. is not valid for the RELATE command. With the REMOVE command, ALL. deletes all existing relationships between the Relation and its associated Internal Records.

Relation/Schemas relationship

Use the following input statements to establish or remove the relationship between the Relation and its associated schemas.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

relation

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Relation for which the relationship is being maintained.
Format	1–25 alphanumeric or special characters (#, \$, and -)

Input statement 2

SC

Positions	7–8
Description	<i>Required.</i> Specifies the schema subcategory for the relationship.

schema

Positions	10–39
Description	<i>Required.</i> Specifies ALL. or the schema name related to this Relation.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding schema name entered during this run.
- ◆ ALL. is not valid with the RELATE command. With the REMOVE command, you can enter ALL. to remove all existing relationships between the Relation and its associated schemas.
- ◆ The schema must already be related to the Conceptual Schema qualifying the Relation.

Relation/Users relationship

Use the following input statements to establish and change relationships between a Relation and its associated Users. Use only the first two input statements to remove or print those relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship data RD Display (print) relationship data RL Establish relationship RM Remove relationship

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

relation

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Relation for which the relationship is being maintained.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Relation name entered during this run.

Input statement 2

US

Positions	7–8
Description	<i>Required.</i> Specifies the User subcategory for the relationship.

user

Positions	10–39
Description	<i>Required.</i> Specifies ALL. or the User name related to the Relation.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding User name entered during this run.
- ◆ ALL. is not valid with the RELATE command. With the RELATIONSHIP DISPLAY or REMOVE commands, you can enter ALL. to remove or print all existing relationships between the Relation and its associated Users.

Input statement 3—RELATE and RELATIONSHIP CHANGE commands only

<i>batch delete option</i>	Position 7	Not applicable to this release.
<i>online delete option</i>	Position 9	Not applicable to this release.
<i>batch save option</i>	Position 11	Not applicable to this release.
<i>online save option</i>	Position 13	Not applicable to this release.
<i>batch define queries option</i>	Position 15	Not applicable to this release.
<i>online define queries option</i>	Position 17	Not applicable to this release.
<i>batch execute queries option</i>	Position 19	Not applicable to this release.
<i>online execute queries option</i>	Position 21	Not applicable to this release.
<i>online submit option</i>	Position 23	Not applicable to this release.
<i>define comp. retrieval option</i>	Position 25	Not applicable to this release.
<i>execute comp. retrieval option</i>	Position 27	Not applicable to this release.
<i>define generalized updates option</i>	Position 29	Not applicable to this release.
<i>execute generalized updates option</i>	Position 31	Not applicable to this release.
<i>define rdm application option</i>	Position 33	Not applicable to this release.
<i>execute rdm application option</i>	Position 35	Not applicable to this release.

STRUCTURE DISPLAY: Relation

Use the following input statements to list the Relation's associated Attributes, External Fields, Foreign Keys, Internal Records, Primary Keys, Schemas, and Users. You must use both input statements to list each structure.

Input statement 1

SD

Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

RE

Positions	4–5
Description	<i>Required.</i> Specifies the Relation category.

relation

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Relation.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Relation name entered during this run.

Input statement 2

subcategory code

Positions	7–8
Description	<i>Required.</i> Indicates whether to show the structure using Attributes, External Fields, Foreign Keys, primary keys, Schemas, or Users.
Format	AT Attribute XF External Field FK Foreign Key IR Internal Record PK Primary Key SC Schema US User

Consideration The table under “[Relationship categories and commands](#)” on page 50 shows the structure displayed for each subcategory.

4

Maintaining External Schema data

This chapter presents the Directory Maintenance input statements used to maintain the External Schema data. These input statements are presented in alphabetical sequence by category and command within each category. Headers are included to help you quickly find the category and command you want to process.

The external schema data categories are

- ◆ Access Set
- ◆ External Field
- ◆ Logical View

Coding command statements

Code command statements as follows:

```
0000000001111111112222222223333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
cm ct xxxxxx yyyyyyy
```

where:

cm is the command code

ct is the category code

xxxxxx is an entity name or value

yyyyyyy is the optional sequence number

After you become familiar with the format of the command statements, use “[Command statement layouts](#)” on page 513 for quick reference of their general layout. That section graphically presents the command statements and all of the fields you enter.

The considerations that follow apply to all input statements. You should be familiar with them before you begin entering data.

Naming data considerations

Naming data transactions specify the required qualifiers for the command statements within each category (see “[Audit listing](#)” on page 34). A naming data transaction contains only the category code in positions 4 and 5, and the name of the qualifying entity beginning in position 7. The qualifier name you enter, such as a schema or file name, becomes a sticky field and is carried over through all subsequent statements until changed. The qualifiers required as naming data are shown before the Command statements for each category.

Command statement considerations

The first input statement for every command is in this standard format:

- ◆ positions 1–2 = command code
- ◆ positions 4–5 = category code
- ◆ positions 7–36 = entity name

Naming conventions for an entity are shown with the ADD command for each category. For example, the first character must be alphabetic, #, \$, or -. Any other references to an entity name contain the description and format but not the conventions. The table under “[Naming data transactions](#)” on page 29 summarizes all naming conventions.

Once you enter the name of an entity, that name becomes a sticky field and is carried over through all subsequent statements until changed. Sticky fields are identified in the considerations for each applicable name by a statement similar to this. You can always name an entity again, even if it is already the value of a sticky field.

The field positions for most ADD and CHANGE commands are identical. When a field is blank for an ADD command and a default value is available, Directory Maintenance uses the default value. When a field is blank for a CHANGE command, the field retains any existing value. The fields that are valid for the ADD command but are not valid for the CHANGE command in the External Field category are exceptions.

You can use default values for many fields. Many default values are set during installation using special default entities. You can use Directory Maintenance to change these default values. “[Supplied default values](#)” on page 557 lists the initial values of these default entities. Other default values are derived from Directory Maintenance software. These default values are listed in this manual and cannot be changed.

A field that previously contained a value is automatically blanked if you place the special null character as the first nonblank character within the field (see “[Eject option](#)” on page 79). The default null character is @. For example, assume the Default Value field in positions 7–38 for a Physical Field contained a value. Entering the null character within that field would delete that value:

```
000111111111122222222233333333
78901234567890123456789012345678
@
```

Entity name fields contain 30 positions and must not contain embedded blanks. If an entity name does not contain 30 characters, you can code the name in any position within the field. Similarly, you do not have to right or left justify data values as long as you position the value within the specified field. For example, the length of an External Field is coded in positions 7–11. If the length is 9, you can code 9 in any position in the field, as shown below:

```
00011
78901
9
```

In the format descriptions, fields are marked as follows:

- ◆ *Required.* Fields must contain a value; you can enter a value or accept a default value. Required fields cannot contain the null character. If you use the null character in a required field, an error will result.
- ◆ *Optional.* Fields can be blank.
- ◆ *Conditional.* Fields may be required or optional depending on the value you enter in another field.

Access Set

The Access Set category defines navigational information needed by RDM and Comprehensive Retrieval to access data on the database. Every Logical View must have a related Access Set. The Access Set category supports the following commands (section references appear in parentheses):

- ◆ ADD (“[ADD/CHANGE: Access Set](#)” on page 169)
- ◆ RELATE (“[RELATE/REMOVE: Access Set](#)” on page 174)
- ◆ CHANGE (“[ADD/CHANGE: Access Set](#)” on page 169)
- ◆ REMOVE (“[RELATE/REMOVE: Access Set](#)” on page 174)
- ◆ CHECK (“[CHECK/DELETE: Access Set](#)” on page 171)
- ◆ RENAME (“[RENAME](#)” on page 504)
- ◆ COPY (“[COPY: Access Set](#)” on page 172)
- ◆ SHORT EDIT (“[SHORT EDIT](#) ” on page 507)
- ◆ DELETE (“[CHECK/DELETE: Access Set](#)” on page 171)
- ◆ SHORT TEXT (“[SHORT TEXT](#) ” on page 510)
- ◆ DISPLAY (“[DISPLAY](#) ” on page 492)
- ◆ STRUCTURE DISPLAY (“[STRUCTURE DISPLAY: Access Set](#)” on page 176)
- ◆ LONG EDIT (“[LONG EDIT](#)” on page 495)
- ◆ VARIABLE DISPLAY (“[VARIABLE DISPLAY](#)” on page 512)
- ◆ LONG TEXT (“[LONG TEXT](#) ” on page 502)
- ◆ VARIABLE EDIT (“[VARIABLE EDIT: Access Set](#)” on page 177)

Naming data transaction

Enter this statement only if you have not entered the naming data during this run.

```
00000000011111111112222222222333333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
```

SC

Positions	4–5
Description	Required. Specifies the schema category.

schema

Positions	7–36
Description	Required. Identifies an existing schema qualifying the Access Set.
Format	1–8 alphanumeric or special characters (#, \$, and @)

ADD/CHANGE: Access Set

Use the following input statements to add or change an Access Set entity. Use the ADD or CHANGE command to specify the format of the Access Set and the VARIABLE EDIT command ("**VARIABLE EDIT: Access Set**" on page 177) to define the access statements.

General consideration

If you change the ACCESS SET TYPE field in the Access Set category, Directory Maintenance will automatically mark the Entity, Access Set, and all related Logical Views inconsistent.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

AS

Positions	4–5
Description	<i>Required.</i> Specifies the Access Set category.

access set

Positions	7–36
Description	<i>Required.</i> Specifies the Access Set being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Access Set name entered during this run.
- ◆ The first character must be #, \$, or alphabetic. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ Each Access Set name must be unique within a schema.
- ◆ An Access Set name cannot be a Reserved Word.

Input statement 2

access set type

Position	7
Description	<i>Optional.</i> Specifies the format of the Access Set.
Default	L
Options	C Compatibility format L RDM format X Reserved for special use

Considerations

- ◆ You must use Option C for Comprehensive Retrieval.
- ◆ After you add or change a Comprehensive Retrieval compatibility-type Access Set, you must Consistency Check the Access Set.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity, Access Set, and all related Logical Views inconsistent.

CHECK/DELETE: Access Set

Use the following input statement to perform a Consistency Check or to delete an Access Set.

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	CK Check DE Delete

AS

Positions	4–5
Description	<i>Required.</i> Specifies the Access Set category.

access set

Positions	7–36
Description	<i>Required.</i> Identifies the Access Set you want to check or delete.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Access Set name entered during this run.

COPY: Access Set

Use the following input statements to copy an Access Set description from one schema (source) to another (target) or to copy an Access Set within a schema.

Input statement 1

CO	
Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

AS	
Positions	4–5
Description	<i>Required.</i> Specifies the Access Set category.

<i>source access set</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the Access Set you want to copy.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Access Set name entered during this run.

Input statement 2

target schema

Positions	7–36
Description	<i>Required.</i> Identifies the schema to which you want to copy the Access Set.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	The name you enter is carried over to subsequent statements.

target access set

Positions	38–67
Description	<i>Optional.</i> Specifies the name of the new Access Set.
Default	Source Access Set name
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	If the source and target schemas are the same, this name must not be the same as the source Access Set name.

relate lv option

Position	69
Description	<i>Optional.</i> Specifies whether to copy the relationships existing between the source Access Set and associated Logical Views.
Default	Y
Options	Y Yes N No
Consideration	Directory Maintenance marks all Logical Views related to the new Access Set as inconsistent.

RELATE/REMOVE: Access Set

Use the following input statements to establish or remove a relationship between an Access Set and its associated Logical Views. Every Logical View must have a related Access Set. To list an Access Set's relationships, use the STRUCTURE DISPLAY command described in "[STRUCTURE DISPLAY: Access Set](#)" on page 176.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

AS

Positions	4–5
Description	<i>Required.</i> Specifies the Access Set category.

access set

Positions	7–36
Description	<i>Required.</i> Specifies the Access Set name for which the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Access Set name entered during this run.

Input statement 2

LV**Positions** 7–8**Description** *Required.* Specifies the Logical View subcategory for the relationship.

logical view**Positions** 10–39**Description** *Required.* Specifies the related Logical View name or ALL.**Format** 1–30 alphanumeric or special characters (#, \$, and -)**Considerations**

- ◆ You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.
- ◆ You can relate an Access Set to several Logical Views.
- ◆ With the RELATE command, ALL. relates each existing Logical View not already related to an Access Set. With the REMOVE command, ALL. deletes all existing relationships between the Access Set and its associated Logical Views.
- ◆ If you specify ALL. with the RELATE command, use the STRUCTURE DISPLAY command to verify the Logical Views related.

STRUCTURE DISPLAY: Access Set

Use the following input statements to list the Access Set's associated Logical Views.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

AS	
Positions	4–5
Description	<i>Required.</i> Specifies the Access Set category.

<i>access set</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the Access Set name for which the structure is being displayed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Access Set name entered during this run.

Input statement 2

LV	
Positions	7–8
Description	<i>Required.</i> Specifies the Logical View subcategory for the structure display.

VARIABLE EDIT: Access Set

Use the following input statements to add or change the variable data describing an Access Set. This manual describes the syntax for compatibility Access Sets used for Comprehensive Retrieval only. For the format of RDM Access Sets, refer to the *SUPRA Server PDM RDM Administration Guide (OS/390 & VSE)*, P26-8220.

Input statement 1

VE

Positions	1–2
Description	<i>Required.</i> Specifies the VARIABLE EDIT command.

AS

Positions	4–5
Description	<i>Required.</i> Specifies the Access Set category.

access set

Positions	7–36
Description	<i>Required.</i> Specifies the Access Set name.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Access Set name entered during this run.

Input statement 2



Use as many of these statements as necessary to perform all the actions associated with this Access Set. When there are no more edit commands, the editor is exited and the Access Set will be resequenced.

editor command code

Positions	7–8
Description	<i>Required.</i> Specifies the function you want to perform.
Options	AD Add Access Set descriptive data CG Change Access Set descriptive data DE Delete specified lines of data DI Print specified lines of data RS Resequence existing lines of data

sequence1

Positions	10–13
Description	<i>Required.</i> In combination with the Sequence2/Increment field, identifies the lines of data you want to process. These values depend on the editor command used.
Format	4 numeric characters
Options	See the table under “LONG EDIT,” beginning on page 495.

sequence2/increment

Positions	15–18
Description	<i>Optional.</i> In combination with the Sequence1 field, identifies the lines of data you want to process. These values depend on the editor command used.
Format	4 numeric characters
Options	See the table under “LONG EDIT,” beginning on page 495.

Input statement 3

access set definition statements

Positions	1–72
Description	<i>Optional.</i> Specifies the Access Set definition statements in variable length and formats.
Format	1–72 alphanumeric characters (for compatibility Access Sets for Comprehensive Retrieval only)

BASE statement format

This statement is optional. If you include this statement, you must enter it first and as shown.

file name

Positions	1–4
Description	<i>Required.</i> Specifies the name of a PDM File or, for Comprehensive Retrieval programs only, a user-defined sequential file.
Format	4 alphanumeric or special characters (#, \$, @, and -)

„BASE

Positions	5–10
Description	<i>Required.</i> Specifies a BASE statement.
Consideration	Must be coded exactly as shown.

Access statement format (Primary File)

Format *fname*[*.f-qualifier*],*cont-key*[*.cont-qualifier*]

where:

Variable	Usage	Description
<i>fname</i>	Required	The 4-character, alphanumeric name of the primary file.
<i>.f-qualifier</i>	Optional	The 4-character, alphanumeric qualifier of the file, if any. If you enter a value, separate it from the <i>fname</i> by a period.
<i>cont-key</i>	Required	A 1–30 alphanumeric character, user-defined label used as a key to the primary file. This key must point to an External Field.
<i>.cont-qualifier</i>	Optional	The 4-character, alphanumeric qualifier of the <i>cont-key</i> , if any. If you enter a value, separate it from the <i>cont-key</i> by a period.

Access statement format (Related File)

Format *fname*[*f-qualifier*],*linkpath*[*qualpath*], FORWARD|REVERSE

where:

Variable	Usage	Description
<i>fname</i>	Required	The 4-character, alphanumeric name of the related file.
<i>f-qualifier</i>	Optional	The 4-character, alphanumeric qualifier of the file, if any. If you enter a value, separate it from the <i>fname</i> by a period.
<i>linkpath</i>	Required	The 8-character, alphanumeric linkpath name. The first four characters must be the name of the associated primary file. The next two characters must be LK. A linkpath must be defined as a Physical Field.
<i>.qualpath</i>	Optional	The 4-character, alphanumeric qualifier of the linkpath, if any. If you enter a value, separate it from the linkpath by a period.
FORWARD REVERSE	Optional	FORWARD indicates the file is read from the beginning of the chain (default). REVERSE indicates the file is read from the end of the chain.

Considerations

- ◆ Use as many of Access Set definition statements as necessary to maintain all the data associated with this Access Set.
- ◆ You cannot continue an Access Set definition statement.
- ◆ Do not embed blanks within an Access Set definition statement.
- ◆ A blank terminates an Access Set definition statement. You can enter comment information after a blank. Any statement beginning with a blank is considered a comment.
- ◆ Place an ampersand (&) in position 1 of the last statement to indicate the end of data.

External Field

The External Field category associates an External Field name with a Physical Field on the database files for use by RDM and Comprehensive Retrieval. The External Field category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/CHANGE: External Field” on page 184)
- ◆ RELATIONSHIP CHANGE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: External Field” on page 196)
- ◆ CHANGE (“ADD/CHANGE: External Field” on page 184)
- ◆ RELATIONSHIP DISPLAY (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: External Field” on page 196)
- ◆ DELETE (“DELETE: External Field” on page 195)
- ◆ REMOVE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: External Field” on page 196)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ RENAME (“RENAME” on page 504)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ RELATE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: External Field” on page 196)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: External Field” on page 205)

General considerations

- ◆ Depending on the parameters you specify with the DELETE command for a related Physical Field, Internal Record, or File, you can delete the External Fields and their relationships, retain the External Fields and remove their relationships to Logical Views, or retain the External Fields and their relationships to Logical Views.
- ◆ When you delete or rename an External Field, you must change the name of the External Field in any Procedures and Access Sets that refer to that entity.

Naming data transaction

Enter this statement only if you have not entered the naming data during this run.

```
00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
```

SC

Positions	4–5
Description	Required. Specifies the schema category.

schema

Positions	7–36
Description	Required. Identifies an existing schema qualifying this External Field.
Format	1–8 alphanumeric or special characters (#, \$, and @)

ADD/CHANGE: External Field

Use the following input statements to add or change an External Field entity.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

XF

Positions	4–5
Description	<i>Required.</i> Specifies the External Field category.

external field

Positions	7–36
Description	<i>Required.</i> Specifies the name of the External Field being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding External Field name entered during this run.
- ◆ The first character must be alphabetic, \$, or #. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ For COBOL RDM applications, do not use names longer than 26 characters because the preprocessor appends four characters to the front of the name.
- ◆ Each External Field name must be unique within a schema.
- ◆ The External Field name cannot be a reserved word.

Input statement 2

data format

Position	7												
Description	<i>Optional.</i> Specifies the format of the data contained in this External Field for use by RDM programs.												
Options	<table><tr><td>B</td><td>Binary</td><td>K</td><td>Kanji</td></tr><tr><td>C</td><td>Character</td><td>P</td><td>Packed decimal</td></tr><tr><td>F</td><td>Floating point</td><td>Z</td><td>Zoned decimal</td></tr></table>	B	Binary	K	Kanji	C	Character	P	Packed decimal	F	Floating point	Z	Zoned decimal
B	Binary	K	Kanji										
C	Character	P	Packed decimal										
F	Floating point	Z	Zoned decimal										

Considerations

- ◆ If you enter a value, you must also enter values for the External Length, Number Decimal Places, and Signed Option fields.
- ◆ If you do not enter a value, Directory Maintenance sets this field and the External Length, Number Decimal Places, and Signed Option fields equal to the values specified for the related Physical Field. This occurs during Consistency Check.
- ◆ Directory Maintenance treats Kanji data as a special form of character string. The value of the External Length field must be a multiple of 2.

function

Positions	9–38		
Description	<i>Optional.</i> Specifies the function of the field for use by RDM programs.		
Format	1–30 alphanumeric characters		
Options	AREA	PRESSURE	TIME
	DATE	STRING	VELOCITY
	DISTANCE	TEMP	VOLUME
	MONEY	TEMPERATURE	WEIGHT
	NUMBER		

Considerations

- ◆ If you enter a value, the value must be the same as the value of the Function field for the associated Physical Field.
- ◆ If you do not enter a value, Directory Maintenance inserts the values of the function and unit from the associated Physical Field. This occurs during the schema Consistency Check.

unit

Positions	40–69
Description	<i>Conditional.</i> Required when you enter a value for the Function field. Specifies the unit of the Function field for use by RDM programs.
Format	1–30 alphanumeric characters
Options	See “Unit field values” on page 549.

Considerations

- ◆ If you enter a value, you must also enter a value for the Function field.
- ◆ If you do not enter a value, Directory Maintenance sets this field and the Unit field equal to the values specified for the associated Physical Field.
- ◆ The value of the Unit field does not have to be the same as the value of the associated Physical Field.

Input statement 3

external length

Positions 7–11

Description *Optional.* Specifies the length of the field for use by RDM programs.

Format 1–5 numeric characters

Considerations

- ◆ This value depends on the data format specified, and whether a MANTIS program uses this field. Valid values are:

Data format	Directory limits	MANTIS limits
B	1, 2, 4, or 8	2 or 4
C	1–32,767	1–254
F	4, 8, or 16	4 or 8
K	2–32,766 (multiple of 2)	2–254 (multiple of 2)
P	1–16	1–8
Z	1–18	1–18

- ◆ If you do not enter a value or if you enter 0, Directory Maintenance sets this field and the Data Format, Number Decimal Places, and Signed Option fields equal to the values specified for the related Physical Field. This occurs during the Consistency Check.
- ◆ If you enter a value, you must also enter values for the Data Format, Number of Decimal Places, and Signed Option fields.

number of decimal places

Positions 13–14

Description *Optional.* Specifies the number of decimal places in a numeric field for use by RDM programs.

Format 1–2 numeric characters

Considerations

- ◆ If you enter F in the Data Format field, do not enter a value in this field.
- ◆ If you do not enter a value or if you enter 0, Directory Maintenance sets this field and the External Length, Data Format, and Signed Option fields equal to the values specified for the Physical Field. This occurs during the Consistency Check.
- ◆ If you enter a value, you must also enter values for the Data Format, External Length, and Signed Option fields.
- ◆ If the Data Format field is K, Directory Maintenance sets this field to 0.

signed option

Position	16
Description	<i>Optional.</i> Indicates whether the numeric data is signed for use by RDM programs and SQL applications.
Options	Y Yes N No

Considerations

- ◆ If you do not enter a value, Directory Maintenance sets this field and the External Length, Data Format, and Number Decimal Places fields equal to the values specified for the related Physical Field. This occurs during the Consistency Check.
- ◆ If you enter a value, you must also enter values for the Data Format, External Length, and Number Decimal Places fields.
- ◆ If the Data Format field is C or K, Directory Maintenance sets this field to N. If the Data Format is F, Directory Maintenance sets this field to Y.
- ◆ For signed fields, the sign nibble must be C for positive, D for negative. For unsigned fields the sign nibble must be F. PDM does not enforce this, but incorrect results will be produced by RDM and SQL applications using data that does not follow this rule.
- ◆ RDM or SQL will use a sign nibble of F for unsigned data, and C or D for signed data.

length of edited field

Positions	18–22
Description	<i>Optional.</i> Indicates the length of the edited field for the Translate/Edit Name.
Format	1–5 numeric characters
Consideration	If you specify a value, you must also enter values for the Translate/Edit Name and Translate/Edit Switch fields.

translate/edit switch

Position	24
Description	<i>Optional.</i> Indicates whether the Translate/Edit Name field identifies an Edit Mask or Translate Table.
Options	E Edit Mask T Translate Table

Considerations

- ◆ If you enter a value, you must also enter a value for the Translate/Edit Name field and a value greater than 0 for the Length of Edited Field.
- ◆ Directory Maintenance does not support this option for Kanji data. When the data format of the External Field is Kanji, Directory Maintenance ignores data entered.

translate/edit name

Positions	26–55
Description	<i>Conditional.</i> Required when the Translate/Edit Switch field contains a value. Indicates the name of the Edit Mask or Translate Table.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ The named Edit Mask or Translate Table must exist on the Directory.
- ◆ When the data format of the External Field is Kanji, Directory Maintenance ignores data entered.

record code

Positions	57–60
Description	<i>Required.</i> Indicates the record(s) you want used with Comprehensive Retrieval automatic logic.
Format	2 alphanumeric characters or ALL.

Input statement 4

print heading

Positions 7–36

Description *Optional.* Indicates the heading you want to print on Comprehensive Retrieval reports.

Format 1–30 alphanumeric characters

Considerations

- ◆ Use a semicolon (;) in the Print Heading Definition field to indicate a line break(s); this functions as a delimiter, and you should not use it as a character within the print heading itself.
- ◆ When the data format of the External Field is Kanji, Directory Maintenance ignores data entered.

data translation exit

Positions 38–45

Description *Optional.* Specifies the name of the exit program called by RDM to translate data for special requirements.

Format 1–8 alphanumeric characters

Consideration Use standard, operating-system-naming conventions.

Input statement 5

relate to pf option

Position	7
Restriction	Use with ADD command only.
Description	<i>Optional.</i> Specifies whether to activate the Relate External Field to Physical Field option.
Default	N
Options	Y Yes (Relate this XF to the specified PF). N No (Do not relate this XF to a PF).

Considerations

- ◆ If this field is Y, you must enter values for the File, Internal Record, and Physical Field fields.
- ◆ Each External Field can refer to only one Physical Field. However, different External Fields can refer to the same Physical Field.

file

Positions	9–38
Restriction	Use with ADD command only.
Description	<i>Conditional.</i> Required when the Relate to PF Option field is Y. Indicates the name of the file containing the Physical Field to which you want the External Field related.
Format	4 alphanumeric or special characters (#, \$, @, and -)

internal record

Positions	40–44
Restriction	Use with ADD command only.
Description	<i>Conditional.</i> Required when the Relate to PF Option field is Y. Indicates the record code of the Physical Field to which you want the External Field related.
Format	2 alphanumeric or printable special characters, or BASE.

related physical field

Positions	46–53
Restriction	Use with ADD command only.
Description	<i>Conditional.</i> Required when the Relate to PF Option field is Y. Indicates the name of the Physical Field to which you want the External Field related.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)

Input statement 6

relate to at option

Position	7
Restriction	Use with ADD command only.
Description	<i>Optional.</i> Specifies whether to activate the Relate External Field to Attribute option.
Default	N
Options	Y Yes N No
Consideration	If this field is Y, you must enter values for the Relation and Attribute fields.

relation

Positions	9–38
Restriction	Use with ADD command only.
Description	<i>Conditional.</i> Required when the Relate To AT Option field is Y. Indicates the name of the Relation qualifying the Attribute to which this External Field is to be related.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Consideration	The Conceptual Schema qualifying the Relation and the schema qualifying the External Field must be related.

attribute

Positions	40–69
Restriction	Use with ADD command only.
Description	<i>Conditional.</i> Required when the Relate To AT Option field is Y. Indicates the name of the Attribute to which this External Field is to be related.
Format	1–25 alphanumeric or special characters (#, \$, and -)

DELETE: External Field

Use the following input statement to delete an External Field entity.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

XF

Positions	4–5
Description	<i>Required.</i> Specifies the External Field category.

external field

Positions	7–36
Description	<i>Required.</i> Specifies the name of the External Field you want to delete.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding External Field name entered during this run.

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: External Field

Use the following input statements to establish or remove relationships between an External Field and its associated Attributes, Logical Views, Physical Fields, and Users. You may also change or print the relationship to Logical Views. To list an External Field's relationships, use the STRUCTURE DISPLAY command described in “**STRUCTURE DISPLAY: External Field**” on page 205.

This section includes the following relationships:

- ◆ External Field/Attributes
- ◆ External Field/Logical Views
- ◆ External Field/Physical Fields
- ◆ External Field/Users

The input statements for each subcategory are described separately.

External Field/Attribute relationship

Use the following input statements to establish or remove the relationship between an External Field and its associated Attribute.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

XF

Positions	4–5
Description	<i>Required.</i> Specifies the External Field category.

external field

Positions	7–36
Description	<i>Required.</i> Specifies the External Field name for which the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding External Field name entered during this run.

Input statement 2

AT

Positions	7–8
Description	<i>Required.</i> Specifies the Attribute subcategory for the relationship.

qualifying relation

Positions	10–39
Description	<i>Required.</i> Specifies the Relation qualifying the related Attribute.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Considerations	<ul style="list-style-type: none">◆ You do not need to enter this name if it is the same as the preceding Relation name entered during this run.◆ The Relation and the Conceptual Schema qualifying the Relation must be related to the schema qualifying the External Field.

attribute

Positions	41–70
Description	<i>Required.</i> Specifies the related Attribute name or ALL.
Format	1–25 alphanumeric or special characters (#, \$, and -)
Considerations	<ul style="list-style-type: none">◆ You do not need to enter this name if it is the same as the preceding Attribute name entered during this run.◆ An External Field can be related to only one Attribute.◆ ALL. is not valid with the RELATE command. With the REMOVE command, ALL. deletes the existing relationships between the External Field and its associated Attribute.

External Field/Logical Views relationship

Use the following input statements to establish and change relationships between an External Field and its associated Logical Views:



The third input statement has two formats: one for the RELATE command and one for the RELATIONSHIP CHANGE command. Use only the first two input statements to remove or print the relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship RD Display (print) relationship RL Establish relationship RM Remove relationship

XF

Positions	4–5
Description	<i>Required.</i> Specifies the External Field category.

external field

Positions	7–36
Description	<i>Required.</i> Specifies the External Field name for which the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding External Field name entered during this run.

Input statement 2

LV

Positions	7–8
Description	<i>Required.</i> Specifies the Logical View subcategory for the relationship.

logical view

Positions	10–39
Description	<i>Required.</i> Specifies the name of the Logical View related to this External Field or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.
- ◆ ALL. is not valid with the RELATE command.
- ◆ With the REMOVE command, ALL. deletes all existing relationships between the External Field and its associated Logical Views.
- ◆ With the RELATIONSHIP DISPLAY command, ALL. prints all existing relationships between the External Field and its associated Logical Views.

Input statement 3 – RELATE command only

position for relate

Positions	7–36		
Description	<i>Optional.</i> Specifies the position of this External Field in relation to an existing External Field within the Logical View.		
Default	END.		
Format	1–30 alphanumeric or special characters (#, \$, and -)		
Options	BEG.	First subelement	
	END.	Last subelement	
	<i>name</i>	Name of the related External Field after which this External Field is positioned	

<i>alias name</i>	Positions	38–53	Not applicable to this release.
<i>record code</i>	Positions	55–58	Not applicable to this release.
<i>control key indicator</i>	Position	60	Not applicable to this release.

Input statement 3—RELATIONSHIP CHANGE command only

<i>alias name</i>	Positions	7–22	Not applicable to this release.
<i>record code</i>	Positions	24–27	Not applicable to this release.
<i>control key indicator</i>	Position	29	Not applicable to this release.

External Field/Physical Field relationship

Use the following input statements to establish or remove the relationship between an External Field and its associated Physical Field.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

XF

Positions	4–5
Description	<i>Required.</i> Specifies the External Field category.

external field

Positions	7–36
Description	<i>Required.</i> Specifies the External Field name for which the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding External Field name entered during this run.

Input statement 2

PF

Positions	7–8
Description	<i>Required.</i> Specifies the Physical Field subcategory for the relationship.

qualifying file

Positions	10–39
Description	<i>Required.</i> Specifies the name of the file qualifying the Physical Field.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

qualifying internal record

Positions	41–70
Description	<i>Required.</i> Specifies the record code of the Physical Field related to the External Field.
Format	2 alphanumeric or printable special characters, or BASE.
Consideration	You do not need to enter this name if it is the same as the preceding Internal Record name entered during this run.

Input statement 3

physical field

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Physical Field related to the External Field.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)

Considerations

- ◆ An External Field can be related to only one Physical Field. However, multiple External Fields can be related to the same Physical Field.
- ◆ You do not need to enter this name if it is the same as the preceding Physical Field name entered during this run.
- ◆ To establish a relationship for a Physical Secondary Key, reference only Primary File Physical Field mmmmCTRL, or atomic sub-definition Physical Fields that completely map mmmmCTRL. Do not reference non-mmmmCTRL Physical Fields.
- ◆ To establish a relationship for the Primary Secondary Key, reference only Primary File Physical Field mmmmCTRL, or atomic sub-definition Physical Fields that completely map mmmmCTRL. Do not reference non-mmmmCTRL Physical Fields.

External Field/Users relationship

This function is not applicable to this release. Directory Maintenance allows the definition, but RDM does not use it.

STRUCTURE DISPLAY: External Field

Use the following input statements to list the External Field's associated Attribute, Logical Views, and Physical Field. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

XF	
Positions	4–5
Description	<i>Required.</i> Specifies the External Field category.

external field	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the External Field.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding External Field name entered during this run.

Input statement 2

subcategory code	
Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	AT Attribute LV Logical View PF Physical Field
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

Logical View

The Logical View category contains information about a particular view of the database and indicates whether RDM or Comprehensive Retrieval can use this view. The Logical View category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/CHANGE: Logical View” on page 208)
- ◆ RELATE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Logical View” on page 214)
- ◆ CHANGE (“ADD/CHANGE: Logical View” on page 208)
- ◆ RELATIONSHIP CHANGE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Logical View” on page 214)
- ◆ CHECK (“CHECK/DELETE: Logical View” on page 210)
- ◆ RELATIONSHIP DISPLAY (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Logical View” on page 214)
- ◆ COPY (“COPY: Logical View” on page 211)
- ◆ REMOVE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Logical View” on page 214)
- ◆ DELETE (“CHECK/DELETE: Logical View” on page 210)
- ◆ RENAME (“RENAME” on page 504)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: Logical View” on page 226)

General consideration

Renaming a Logical View does not change the name stored in a procedure that accesses it; therefore, those procedures will not operate. You should give the new name to all Users of the Logical View. You should restore Comprehensive Retrieval procedures using the new name and change and recompile RDM applications.

Naming data transactions

Enter this statement only if you have not entered the naming data during this run.

```
0000000001111111112222222223333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
```

SC

Positions 4–5

Description *Required.* Specifies the schema category.

schema

Positions 7–36

Description *Required.* Identifies an existing schema qualifying this Logical View.

Format 1–8 alphanumeric or special characters (#, \$, and @)

Consideration You do not need to enter this name if it is the same as the preceding schema name entered during this run.

ADD/CHANGE: Logical View

Use the following input statements to add or change a Logical View entity.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

LV

Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

logical view

Positions	7–36
Description	<i>Required.</i> Specifies the Logical View being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ Each Logical View name must be unique within a schema.

Input statement 2

<i>public view indicator</i>	Position 7	Not applicable to this release.
<i>online query indicator</i>	Position 9	Not applicable to this release.
<i>batch query indicator</i>	Position 11	Not applicable to this release.
<i>comprehensive retrieval indicator</i>	Position 13	Not applicable to this release.
<i>generalized updates indicator</i>	Position 15	Not applicable to this release.
<i>rdm indicator</i>	Position 17	Not applicable to this release.
<i>site table name</i>	Positions 19–48	Not applicable to this release.

CHECK/DELETE: Logical View

Use the following input statements to perform a Consistency Check or to delete a Logical View. Use the second input statement only when you want to delete a Logical View.

Input statement 1

command code	
Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	CK Check DE Delete

LV	
Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

logical view	
Positions	7–36
Description	<i>Required.</i> Specifies the Logical View being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.

Input statement 2 – DELETE command only

delete as option	
Position	7
Description	<i>Optional.</i> Specifies whether to delete the related Access Set.
Default	N
Options	Y Yes N No
Consideration	If you enter Y, the Access Set is deleted only if it is not related to another Logical View.

COPY: Logical View

Use the following input statements to copy an existing Logical View from one schema (source) to another (target). The source and target schemas may be the same. Copying within the same schema is useful when you need several Logical Views with only slight differences.

Input statement 1

CO

Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

LV

Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

source logical view

Positions	7–36
Description	<i>Required.</i> Identifies the Logical View you want to copy.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.

Input statement 2

target schema

Positions	7–36
Description	<i>Required.</i> Identifies the schema to which you want to copy the Logical View.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	The schema name entered becomes a sticky field and is carried over to subsequent statements.

target logical view

Positions	38–67
Description	<i>Optional.</i> Specifies the name of the new Logical View.
Default	Source Logical View
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	If the source and target schemas are the same, do not enter the same name here and in the Source Logical View field.

Input statement 3

relate users option

Position	7
Description	<i>Optional.</i> Indicates whether to relate all related Users to the new Logical View.
Default	Y
Options	Y Yes N No

relate access sets option

Position	9
Description	<i>Optional.</i> Indicates whether to relate all related Access Sets to the new Logical View.
Default	Y
Options	Y Yes N No

copy external fields option

Position	11
Description	<i>Optional.</i> Indicates whether to copy all related External Fields of the Source Logical View to the target schema and related to the new Logical View.
Default	Y
Options	Y Yes N No
Consideration	Regardless of the value you enter, all External Fields related to the Source Logical View that already exist in the target schema will be related to the new Logical View.

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Logical View

Use the following input statements to establish or remove a relationship between a Logical View and its associated Access Sets, Environment Descriptions, External Fields, and Users. You may also change or print any of these relationships except Access Set relationships. To list a Logical View's relationships, use the STRUCTURE DISPLAY command described in “**STRUCTURE DISPLAY: Logical View**” on page 226.

This section includes the following relationships:

- ◆ Logical View/Access Sets
- ◆ Logical View/Environment Descriptions
- ◆ Logical View/External Fields
- ◆ Logical View/Users

The input statements for each subcategory are described separately.

Logical View/Access Sets relationship

Use the following input statements to establish or remove the relationship between a Logical View and its associated Access Sets.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

LV

Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

logical view

Positions	7–36
Description	<i>Required.</i> Specifies the Logical View for which relationships are being established or removed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.

Input statement 2

AS

Positions	7–8
Description	<i>Required.</i> Specifies the Access Set subcategory for the relationship.

access set

Positions	10–39
Description	<i>Required.</i> Specifies the Access Set related to this Logical View or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Access Set name entered during this run.
- ◆ With the RELATE command, ALL. relates each existing Access Set that is not already related to this Logical View. With the REMOVE command, ALL. deletes all existing relationships between the Logical View and its associated Access Sets.
- ◆ If you specify ALL. with the RELATE command, use the STRUCTURE DISPLAY command to verify the Access Set names.
- ◆ You can relate a Logical View to many Access Sets; however, RDM uses only the first Access Set that you relate to the Logical View.

Logical View/Environment Descriptions relationship

Use the following input statements to establish and change relationships between a Logical View and its associated Environment Descriptions. Use only the first two input statements to remove or print those relationships

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship RD Display (print) relationship RL Establish relationship RM Remove relationship

LV

Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

logical view

Positions	7–36
Description	<i>Required.</i> Specifies the Logical View for which relationships are being established or removed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.

Input statement 2

ED

Positions	7–8
Description	<i>Required.</i> Specifies the Environment Description subcategory for the relationship.

environment description

Positions	10–39
Description	<i>Required.</i> Specifies the Environment Description related to this Logical View or ALL.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.
- ◆ ALL. is not valid with the RELATE command.
- ◆ With the REMOVE command, you can enter ALL. to remove all existing relationships between this Logical View and associated Environment Descriptions.
- ◆ With the RELATIONSHIP DISPLAY command, you can enter ALL. to print all existing relationships between this Logical View and associated Environment Descriptions.

Input statement 3—*RELATE* and *RELATIONSHIP CHANGE* commands only

open mode

Positions 7–10

Description *Required.* Specifies the type of open you want RDM to perform.

Options NONE Not opened during RDM initialization

 READ Read only

 SUPD Shared update

Consideration RDM currently does not use this information.

Logical View/External Fields relationship

Use the following input statements to establish and change relationships between a Logical View and its associated External Fields. Use only the first two input statements to remove or print those relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship RD Print relationship RL Establish relationship RM Remove relationship

LV

Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

logical view

Positions	7–36
Description	<i>Required.</i> Specifies the Logical View for which relationships are being established or removed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.

Input statement 2

XF

Positions	7–8
Description	<i>Required.</i> Specifies the External Field subcategory for this relationship.

external field

Positions	10–39
Description	<i>Required.</i> Specifies the External Field related to this Logical View or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding External Field name entered during this run.
- ◆ ALL. is not valid with the RELATE command. With the REMOVE or RELATIONSHIP DISPLAY commands, you can enter ALL. to remove or print all existing relationships between the Logical View and its associated External Fields.

Input statement 3—RELATE and RELATIONSHIP CHANGE commands only

position for relate

Positions	7–36
Description	<i>Required.</i> Specifies the position of the External Field relative to a parent field.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Options	BEG. First subelement END. Last subelement name Name of an External Field already related to the Logical View after which this External Field is positioned

alias name	Positions	38–53	Not applicable to this release.
record code	Positions	55–58	Not applicable to this release.
control key indicator	Position	60	Not applicable to this release.

Logical View/Users relationship

Use the following input statements to establish and change relationships between a Logical View and its associated Users. Use only the first two input statements to remove or print those relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship RD Print relationship RL Establish relationship RM Remove relationship

LV

Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

logical view

Positions	7–36
Description	<i>Required.</i> Specifies the Logical View for which relationships are being established or removed.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.

Input statement 2

US**Positions** 7–8**Description** *Required.* Specifies the User subcategory for the relationship.

user**Positions** 10–39**Description** *Required.* Specifies the Users related to this Logical View or ALL.**Format** 1–30 alphanumeric or special characters (#, \$, and -)**Considerations**

- ◆ You do not need to enter this name if it is the same as the preceding User name entered during this run.
- ◆ ALL. is not valid with the RELATE command. With the REMOVE or RELATIONSHIP DISPLAY commands, you can enter ALL. to remove or print all existing relationships between the Logical View and its associated Users.

Input statement 3—RELATE and RELATIONSHIP CHANGE commands only

<i>batch delete option</i>	Position 7	Not applicable to this release.
<i>online delete option</i>	Position 9	Not applicable to this release.
<i>batch save option</i>	Position 11	Not applicable to this release.
<i>online save option</i>	Position 13	Not applicable to this release.
<i>batch define queries option</i>	Position 15	Not applicable to this release.
<i>online define queries option</i>	Position 17	Not applicable to this release.
<i>batch execute queries option</i>	Position 19	Not applicable to this release.
<i>online execute queries option</i>	Position 21	Not applicable to this release.
<i>online submit option</i>	Position 23	Not applicable to this release.
<i>define comp. retrieval option</i>	Position 25	Not applicable to this release.
<i>execute comp. retrieval option</i>	Position 27	Not applicable to this release.
<i>define generalized updates option</i>	Position 29	Not applicable to this release.
<i>execute generalized updates option</i>	Position 31	Not applicable to this release.
<i>define rdm applications option</i>	Position 33	Not applicable to this release.
<i>execute rdm applications option</i>	Position 35	Not applicable to this release.

STRUCTURE DISPLAY: Logical View

Use the following input statements to list the Logical View's associated Access Sets, Environment Descriptions, External Fields, and Users. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

LV	
Positions	4–5
Description	<i>Required.</i> Specifies the Logical View category.

<i>logical view</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the Logical View.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.

Input statement 2

<i>subcategory code</i>	
Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	AS Access Set ED Environment Description XF External Field US User
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

5

Maintaining Internal Schema data

This chapter presents the Directory Maintenance input statements used to maintain the Internal Schema data. These input statements are presented in alphabetical order by category and command within each category. Headers are included to help you quickly find the category and command you want to process.

The Internal Schema data categories are:

- ◆ Buffer Pool
- ◆ Environment Description
- ◆ File
- ◆ Internal Record
- ◆ Key Code
- ◆ Log Group
- ◆ Physical Field
- ◆ Schema
- ◆ Secondary Key

Coding command statements

Code command statements as follows:

```
0000000001111111112222222222333333333344444444445555555555666666666677777777778
1234567890123456789012345678901234567890123456789012345678901234567890
cm ct xxxxxx yyyyyyyy
```

where:

cm is the command code

ct is the category code

xxxxxx is an entity name or value

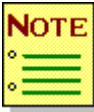
yyyyyyyy is the optional sequence number

After you become familiar with the format of the command statements, use “[Command statement layouts](#)” on page 513 for a quick reference of their general layout. That section graphically presents the command statements and all of the fields you enter.

The considerations that follow apply to all input statements. You should be familiar with them before you begin entering data.

Naming data considerations

Naming data transactions specify the required qualifiers for the command statements within each category (see “[Audit listing](#)” on page 34). A naming data transaction contains only the category code in positions 4 and 5, and the name of the qualifying entity beginning in position 7. The qualifier name you enter, such as a schema or file name, becomes a sticky field and is carried over through all subsequent statements until changed. The qualifiers required as naming data are shown before the command statements for each category.



Some fields and relationships designated for use by RDM may not be supported by RDM with this release. However, RDM fields designated as required by the Directory must have a value, or an error will result.

Command statement considerations

The first input statement for every command is in this standard format:

- ◆ positions 1–2 = command code
- ◆ positions 4–5 = category code
- ◆ positions 7–36= entity name

Naming conventions for an entity are shown with the ADD command for each category. For example, the first character must be alphabetic, #, \$, or -. Any other references to an entity name contain the description and format but not the conventions. The table under “[Naming data transactions](#)” on page 29 summarizes all naming conventions.

Once you enter the name of an entity, that name becomes a sticky field and is carried over through all subsequent statements until changed. Sticky fields are identified in the considerations for each applicable name by a statement similar to this: You do not need to enter this name if it is the same as the preceding file name during this run. However, you can always name an entity again, even if it is already the value of a sticky field.

The field positions for most ADD and CHANGE commands are identical. When a field is blank for an ADD command and a default value is available, Directory Maintenance uses the default value. When a field is blank for a CHANGE command, the field retains any existing value. The fields that are valid for the ADD command but are not valid for the CHANGE command in the Physical Field and File categories are exceptions.

You can use default values for many fields. Many default values are set during installation using special default entities. You can use Directory Maintenance to change these default values. “[Supplied default values](#)” on page 557 lists the initial values of these default entities. Other default values are derived from Directory Maintenance software. These default values are listed in this manual and cannot be changed.

A field that previously contained a value is automatically blanked if you place the special null character as the first nonblank character within the field (see “**Eject option**” on page 79). The default null character is @. For example, assume the Default Value field in positions 7–38 for a Physical Field contained a value. Entering the null character within that field would delete that value:

```
0001111111111122222222223333333333
78901234567890123456789012345678
@
```

Entity name fields contain 30 positions and must not contain embedded blanks. If an entity name does not contain 30 characters, you can code the name in any position within the field. Similarly, you do not have to right or left justify data values as long as you position the value within the specified field. For example, the length of an External Field is coded in positions 7–11. If the length is 9, you can code 9 in any position in the field, as shown below:

```
00011
78901
9
```

In the format descriptions, fields are marked as follows:

- ◆ *Required.* Fields must contain a value; you can enter a value or accept a default value. Required fields cannot contain the null character. If you use the null character in a required field, an error will result.
- ◆ *Optional.* Fields can be blank.
- ◆ *Conditional.* Fields may be required or optional depending on the value you enter in another field.

Buffer Pool

The Buffer Pool category describes the I/O buffers used by the PDM. The Buffer Pool category supports the following commands (section references appear in parentheses):

- ◆ ADD (“[ADD/CHANGE: Buffer Pool](#)” on page 233)
- ◆ DISPLAY (“[DISPLAY](#)” on page 492)
- ◆ CHANGE (“[ADD/CHANGE: Buffer Pool](#)” on page 233)
- ◆ STRUCTURE DISPLAY (“[STRUCTURE DISPLAY: Buffer Pool](#)” on page 238)
- ◆ DELETE (“[DELETE: Buffer Pool](#)” on page 237)

General considerations

- ◆ Multiple files related to one Environment Description can use the same Buffer Pool. However, system files and database files must not share a Buffer Pool.
- ◆ When you delete a Buffer Pool, change the Environment Description-to-File relationship data for files that used the deleted Buffer Pool. You must enter an existing Buffer Pool name. If any file refers to a Buffer Pool that is not defined, the schema Consistency Check will fail. Therefore, if you delete or modify a Buffer Pool, be sure to update all user files that refer to that Buffer Pool.
- ◆ When you add, change, or delete a Buffer Pool, the associated schema must pass a Consistency Check before the PDM can execute with it.

Naming data transaction

Enter these statements only if you have not entered the naming data during this run.

00000000111111112222222233333333444444445555555566666666777777778

12345678901234567890123456789012345678901234567890123456789012345678901234567890

SC schema

ED environment description

Input statement 1

SC

Positions 4–5

Description	<i>Required.</i> Specifies the schema category.
--------------------	---

schema**Positions** 7–36

Description	<i>Required.</i> Identifies an existing schema qualifying this Buffer Pool.
--------------------	---

Format 1–8 alphanumeric or special characters (#, \$, and @)

Input statement 2

ED

Positions 4–5

Description	<i>Required.</i> Specifies the Environment Description category.
--------------------	--

environment description

Positions 7–36

Description	<i>Required.</i> Identifies an existing Environment Description qualifying the Buffer Pool.
--------------------	---

Format 1–8 alphanumeric or special characters (#, \$, and @)

ADD/CHANGE: Buffer Pool

Use the following input statements to add or change a Buffer Pool entity.

General consideration

If you change the DIRECT BUFFER COUNT field in the Buffer Pool category, Directory Maintenance will automatically mark the Schema inconsistent.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

BP

Positions	4–5
Description	<i>Required.</i> Specifies the Buffer Pool category.

buffer pool**Positions** 7–36**Description** *Required.* Specifies the Buffer Pool being processed.**Format** 1–4 alphanumeric or special characters (#, \$, and @)**Considerations**

- ◆ You do not need to enter this name if it is the same as the preceding Buffer Pool name entered during this run.
- ◆ The first character must be alphabetic, #, \$, or @. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, and @.
- ◆ If you use @ as the null character, do not use @ as the first character of the Buffer Pool name.
- ◆ Task Log, System Log, and Statistics Log Files may share a Buffer Pool. Primary, related, and index files may share a Buffer Pool. However, a database or an index file cannot share the Buffer Pool used for the Task Log, System Log, or Statistics Log File.
- ◆ Each Buffer Pool name must be unique within an Environment Description.

Input statement 2

direct buffer count

Positions	7–11
Description	<i>Required.</i> Specifies the number of buffers in this pool for direct access use.
Options	1–32,767

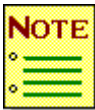
Considerations

- ◆ The minimum number of direct buffers must equal the sum of the number of Task Log Files, Statistics Log Files, and Log Groups sharing the Buffer Pool.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

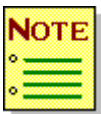
number of serial buffers

Positions	13–17
Description	<i>Optional.</i> Specifies the number of serial buffers in the pool.
Default	0
Options	1–32,767

Consideration Serial buffers and threads are not used for this release; however, if numbers exist in these fields, the PDM will run a calculation adding the value to the number of direct buffers/threads.



Because this will affect memory, Cincom recommends you use the default value of 0.

number of serial threads**Positions** 19–23**Description** *Optional.* Specifies the number of concurrent serial threads using the pool.**Default** 0**Options** 1–32,767**Consideration** Serial buffers and threads are not used for this release; however, if numbers exist in these fields, the PDM runs a calculation which adds the value to the number of direct buffers/threads.

Because this will affect memory, we recommend you use the default value of 0.

minimum percentage of direct buffers available**Positions** 25–27**Description** *Required.* Specifies the minimum percent of direct buffers in the buffer pool available for immediate use.**Format** 1–3 numeric characters**Options** 1%–100%**Consideration** Use this field when tuning a database. You can flush buffers before they are needed.

DELETE: Buffer Pool

When you delete a Buffer Pool, change the Environment Description-to-File relationship data to refer to an existing Buffer Pool.

Use the following input statement to delete a Buffer Pool entity.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

BP

Positions	4–5
Description	<i>Required.</i> Specifies the Buffer Pool category.

buffer pool

Positions	7–36
Description	<i>Required.</i> Identifies the Buffer Pool you want to delete.
Format	1–4 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Buffer Pool name entered during this run.

STRUCTURE DISPLAY: Buffer Pool

Use the following input statements to list the Buffer Pool's associated files:

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

BP	
Positions	4–5
Description	<i>Required.</i> Specifies the Buffer Pool category.

<i>buffer pool</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the Buffer Pool name.
Format	1–4 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Buffer Pool name entered during this run.

Input statement 2

FI	
Positions	7–8
Description	<i>Required.</i> Specifies the file subcategory.

Environment Description

The Environment Description category contains execution-time information that describes the operating environment to the PDM. Once the PDM has been initialized, the options in the Environment Descriptions defined on the Directory override the options defined in the bootstrap Environment Descriptions. Two exceptions, the PDM Storage Allocation field and the Task Log Option field, are discussed in the considerations for these fields.

The Environment Description category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/CHANGE: Environment Description” on page 241)
- ◆ RELATIONSHIP CHANGE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Environment Description” on page 257)
- ◆ CHANGE (“ADD/CHANGE: Environment Description” on page 241)
- ◆ RELATIONSHIP DISPLAY (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Environment Description” on page 257)
- ◆ COPY (“COPY: Environment Description” on page 254)
- ◆ REMOVE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Environment Description” on page 257)
- ◆ DELETE (“DELETE: Environment Description” on page 256)
- ◆ RENAME (“RENAME” on page 504)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: Environment Description” on page 267)
- ◆ RELATE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Environment Description” on page 257)

General considerations

- ◆ When you delete an Environment Description, Directory Maintenance also deletes all Buffer Pools and Log Groups related to the deleted entity.
- ◆ You specify global RDM views by using the LONG EDIT command to enter the view names into the long text for an Environment Description. For information on how to define an Environment Description, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

Naming data transaction

Enter this statement only if you have not entered the naming data during this run.

```
000000000111111111122222222223333333333344444444445555555555666666666677777777778
12345678901234567890123456789012345678901234567890123456789012345678901234567890
SC schema
```

SC

Positions	4–5
Description	<i>Required.</i> Specifies the schema category.

schema

Positions	7–36
Description	<i>Required.</i> Identifies an existing schema qualifying this Environment Description.
Format	1–8 alphanumeric or special characters (#, \$, and @)

ADD/CHANGE: Environment Description

Use the following input statements to add or change an Environment Description. Note that all default values are taken from the Environment Description default entity.

General consideration

If you change the following fields in the Environment Description category, Directory Maintenance will automatically mark the Schema inconsistent:

- ◆ ACCESS MODE
- ◆ DIRECTORY ACCESS METHOD
- ◆ LOG OPTIONS
- ◆ STATISTICS INDICATOR
- ◆ TASK LOG OPTION

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

ED

Positions	4–5
Description	<i>Required.</i> Specifies the Environment Description category.

environment description

Positions	7–36
Description	<i>Required.</i> Identifies the Environment Description being processed.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.
- ◆ The first character must be alphabetic, #, \$, or @. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, and @.
- ◆ If you use @ as the null character, do not use @ as the first character of the Environment Description name.
- ◆ Each Environment Description name must be unique within a schema.

Input statement 2

max connected interfaces

Positions	7–11
Description	<i>Required.</i> Specifies the maximum number of concurrent interfaces that can be connected to the PDM.
Options	1–32,767
Consideration	This value should be less than or equal to the value of the Max Connected Threads field.

max connected threads

Positions	13–17
Description	<i>Required.</i> Specifies the maximum number of concurrent threads allowable in the PDM.
Options	1–32,767
Consideration	This value should be greater than or equal to the value of the Max Connected Interfaces field, and less than or equal to the value of the Max Signed-on Tasks field.

max signed-on tasks

Positions	19–23
Description	<i>Required.</i> Indicates the maximum number of tasks that can be signed on to the PDM concurrently.
Options	1–32,767
Consideration	This value should be greater than or equal to the value of the Max Connected Threads field.

PDM storage allocation

Positions	25–35
Description	<i>Required.</i> Specifies the amount of memory you want to allocate for the PDM tables and buffers.
Options	1–16,777,208 or 1–16,383K

Considerations

- ◆ This value must be a multiple of 8. If you enter a value that is not a multiple of 8, Directory Maintenance rounds the value to the next highest multiple of 8.
- ◆ This field requests an allocation in bytes or, when followed by the letter K, in multiples of 1024 bytes.
- ◆ The PDM uses the value defined in the Environment Descriptions on the Directory and the value defined in the bootstrap Environment Description to create two separate memory pools in the PDM.
- ◆ For memory calculations, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

max held records

Positions	37–41
Description	<i>Required.</i> Indicates the maximum number of records that can be monitored, locked, or held by the PDM.
Options	1–32,767

Consideration To obtain the value when you specify TASK LOG OPTION=N, do the following:

1. Multiply the maximum number of linkpaths in any related record by 4.
2. Add 1 for the record being updated.
3. Then multiply your total by the maximum threads specified.

log options**Positions** 43–46**Description** *Required.* Indicates the type of system logging options.**Options** 4 alphabetic characters in the format *sbfa*, where:

<i>s</i> =	N	No sign-ons
	U	Update sign-ons
	A	All sign-ons
<i>b</i> =	N	No before images
	B	All before images
<i>f</i> =	N	No functions
	U	Update functions
	A	All functions
<i>a</i> =	N	No after images
	A	All after images

Considerations

- ◆ If you enter a value other than *NNNN*, you must define System Log Files and Log Group Files in the schema and relate it to this Environment Description.
- ◆ If you specify no sign-ons, you cannot log before or after images. Therefore, *NBxx* and *NxxA* are invalid.
- ◆ If the Task Log Option is *Y*, the only valid log option combinations are *ABxx*, *ANxA*, and *NNNN* (because of the Recover and Restore functions of the DBA utilities).
 - Before Image Logging must be specified to use the Batch System Recover Utility Function.
 - After Image Logging must be specified to use the Batch System Restore Utility Function.
- ◆ If you change this field, Directory Maintenance will automatically mark the schema inconsistent. For more information, refer to the [SUPRA Server PDM Logging and Recovery Guide \(OS/390 & VSE\)](#), P26-2223.

task log option

Position	48
Description	<i>Required.</i> Indicates whether you want a Task Log File maintained for database recovery by task.
Options	Y Yes N No

Considerations

- ◆ If you enter Y, you must define a Task Log File in the schema and relate it to this Environment Description.
- ◆ The PDM obtains the value of this option from the bootstrap Environment Description. If the value is not the same in the Environment Description defined on the Directory, the PDM abends.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent. For more information, refer to the [*SUPRA Server PDM Logging and Recovery Guide \(OS/390 & VSE\)*](#), P26-2223.

end log option

Position 50

Description *Required.* Specifies the action you want taken on the System Log File when an ENDLG command is issued.

Options C Close
F Force end-of-volume

Considerations

- ◆ If you enter C, the PDM flushes all database files (writes the unwritten buffers), and the ENDLG command closes the System Log File with the CLOSE macro and then reopens it with the OPEN macro.
- ◆ If you enter F and the current System Log File is on tape, the PDM flushes all database files (writes the unwritten buffers) and requests that the next tape volume be mounted.
- ◆ If you enter F and the current System Log File is on disk, the PDM flushes all database files and switches to the next file, if another file is available. If this is the last file in the Log Group and the Wrap option has not been specified, the PDM ignores the ENDLG command and returns a status of *IGN (ignore).
- ◆ If you use the Recover and Restore utilities, do not enter C. This option reuses the Log File, thereby destroying information at the beginning of the file before there is enough information on the new log file to successfully recover or restore via the utilities.

openx option

Position 52

Description *Required.* Indicates how the PDM is to handle OPENX and CLOSX commands from an application.

Options C Check OPENX and CLOSX commands against the current PDM file mode list (no opens or closes are processed)
I Ignore OPENX and CLOSX commands
P Process OPENX and CLOSX commands

Consideration Enter P for the Environment Description used by utilities.

PDM console option

Position	54
Description	<i>Required.</i> Indicates whether to route PDM messages to the system console.
Options	Y Yes N No
Consideration	Regardless of how you set this option, some PDM abend messages are routed to the system console.

statistics indicator

Position	56
Description	<i>Required.</i> Indicates whether to enable statistics recording.
Options	Y Yes N No

Considerations

- ◆ If you enter Y, you must define a Statistics Log File in the schema and relate it to this Environment Description.
- ◆ When generating statistics in a VSE environment, you cannot output to a tape.
- ◆ For information about the Execution Statistics utility, refer to the *SUPRA Server PDM DBA Utilities User's Guide (OS/390 & VSE)*, P26-6260.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

access mode

Positions 58–63

Description *Required.* Indicates which PDM functions are valid.

Options RDONLY Read only

RECOVR Recover

UPDATE Update

Considerations

- ◆ Enter UPDATE for the Environment Description used by utilities.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

directory access method

Positions 65–68

Description *Required.* Indicates the type of access allowed by the PDM against the Directory Files.

Options READ Read only

SUPD Shared update

Consideration If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

Input statement 3

func. input exit program

Positions 7–14

Description *Optional.* Specifies the name of the function input exit program you want called before a DML command is executed. For more information about PDM exits, refer to the [SUPRA Server PDM and Directory Administration Guide \(OS/390 & VSE\)](#), P26-2250.

Format 1–8 alphanumeric characters

Consideration Use standard, operating-system-naming conventions.

open exit program

Positions 16–23

Description *Optional.* Specifies the name of the exit program you want called before a database file or the System Log File is opened.

Format 1–8 alphanumeric characters

Consideration Use standard, operating-system-naming conventions.

close exit program

Positions 25–32

Description *Optional.* Specifies the name of the exit program you want called before a database file or the System Log File is closed.

Format 1–8 alphanumeric characters

Consideration Use standard, operating-system-naming conventions.

read exit program

Positions 34–41

Description *Optional.* Specifies the name of the exit program you want called before a file is read.

Format 1–8 alphanumeric characters

Consideration Use standard, operating-system-naming conventions.

write exit program

Positions	43–50
Description	<i>Optional.</i> The name of the exit program you want called before a database file or the System Log File is written.
Format	1–8 alphanumeric characters
Consideration	Use standard, operating-system-naming conventions.

check exit program

Positions	52–59
Description	<i>Optional.</i> Specifies the name of the exit program you want called before the System Log File is checked.
Format	1–8 alphanumeric characters
Consideration	Use standard, operating-system-naming conventions.

shutdown password

Positions	61–68
Description	<i>Optional.</i> Specifies the password required when shutting the PDM down.
Default	**NONE**
Format	1–8 alphanumeric or special characters (\$, #, and @)

Input statement 4

batch delay time

Positions	7–13
Description	<i>Required.</i> Specifies how many seconds a batch task will wait for a held record before a HELD status is returned.
Options	0–86,400 (24 hours)
Consideration	If you enter 0, a HELD status is returned immediately.

tp-monitor delay time

Positions	15–21
Description	<i>Required.</i> Specifies how many seconds a TP monitor task will wait for a held record before a HELD status is returned.
Options	0–86,400 (24 hours)
Consideration	If you enter 0, a HELD status is returned immediately.

logical write exit

Positions	39–46 logical write exit
Description	<i>Optional.</i> Specifies the name of the exit program you call before the System Log File is logically written.
Format	1–8 alphanumeric characters
Consideration	Use standard, operating-system-naming conventions.

new volume exit

Positions	48–55
Description	<i>Optional.</i> Specifies the name of the exit program you call before a new volume of the System Log File is begun.
Format	1–8 alphanumeric characters
Consideration	Use standard, operating-system-naming conventions.

Input statement 5

local site name	Positions	7–36	Not applicable to this release.
------------------------	------------------	-------------	---------------------------------

bound name	Positions	38–45	Not applicable to this release.
-------------------	------------------	--------------	---------------------------------

maximum read locks

Positions	47–51
------------------	-------

Description	<i>Required.</i> Indicates the maximum number of records that can be concurrently read locked by the PDM.
--------------------	---

Format	1–5 numeric characters
---------------	------------------------

Options	1–32767
----------------	---------

interface scan interval

Positions	53–56
------------------	-------

Restriction	For SUPRA Server release 2.7 and higher only.
--------------------	---

Description	<i>Required.</i> Specifies how often (in seconds) the PDM examines each interface to determine whether it is still there or has abnormally terminated (application error or operator cancel, etc.).
--------------------	---

Format	1–4 numeric characters
---------------	------------------------

Options	1–9999 seconds
----------------	----------------

Consideration	This field is ignored in any non-VSE system.
----------------------	--

memory cleanup threshold

Positions	58–60
------------------	-------

Restriction	For SUPRA Server release 2.7 and higher only.
--------------------	---

Description	<i>Required.</i> Specifies the threshold for initiation of memory reclamation. It is specified as a percentage.
--------------------	---

Format	1–3 numeric characters
---------------	------------------------

Options	0%–100%
----------------	---------

Consideration	Whenever the amount of memory in use exceeds the threshold, the PDM attempts to reclaim noncritical memory when a COMMIT is executed in Task Level Recovery environments or when a QUIET or QMARK is executed in nonTask Level Recovery environments.
----------------------	---

COPY: Environment Description

Use the following input statements to copy an existing Environment Description from one schema (source) to another (target):



You can copy an Environment Description into a different schema or into the same schema using a new Environment Description name. Copying within the same schema is advantageous when you need two Environment Descriptions that differ only slightly.

When you copy an Environment Description within the same schema, Directory Maintenance automatically relates the new Environment Description to the same files and Logical Views as the copied Environment Description.

When you copy an Environment Description to a new schema, Directory Maintenance relates the new Environment Description to the same files and Logical Views as the copied Environment Description only if the file and Logical View names already exist in the new schema.

Input statement 1

CO	
Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

ED	
Positions	4–5
Description	<i>Required.</i> Specifies the Environment Description category.

source environment description	
Positions	7–36
Description	<i>Required.</i> Identifies the Environment Description you want to copy.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.

Input statement 2

target schema

- Positions** 7–36
- Description** *Required.* Identifies the schema to which you want to copy the Environment Description.
- Format** 1–8 alphanumeric or special characters (#, \$, and @)
- Consideration** You do not need to enter this name if it is the same as the preceding target schema name entered during this run.

target environment description

- Positions** 38–67
- Description** *Optional.* Specifies the name of the new Environment Description.
- Default** Source Environment Description name
- Format** 1–8 alphanumeric or special characters (#, \$, and @)
- Consideration** If the source and target schemas are the same, this Environment Description name must not be the same as the source Environment Description.

DELETE: Environment Description

When you delete an Environment Description, Directory Maintenance also deletes all Buffer Pools and Log Groups related to the deleted entity.

Use the following input statement to delete an Environment Description.

DE	
Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

ED	
Positions	4–5
Description	<i>Required.</i> Specifies the Environment Description category.

<i>environment description</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the name of the Environment Description you want to delete.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Environment Description

Use the following input statements to establish, change, print, or remove relationships between an Environment Description and its associated PDM Files and Logical Views. To list an Environment Description's relationships, use the STRUCTURE DISPLAY command described in "[STRUCTURE DISPLAY: Environment Description](#)" on page 267.

This section includes the Environment Description/Files and Environment Description/Logical Views relationships. The input statements for each subcategory are described separately.

Environment Description/Files relationship

Use the following input statements to establish or change the relationship between an Environment Description and its associated PDM Files, including the Task Log, System Log, and Statistics Log Files. You cannot relate a non-PDM File. Use only the first two input statements to print or remove the relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship data RD Display (print) relationship data RL Establish relationship RM Remove relationship

ED

Positions	4–5
Description	Specifies the Environment Description category.

environment description

Positions	7–36
Description	<i>Required.</i> Identifies the name of the Environment Description for which the relationship is being maintained.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.

Input statement 2

FI

Positions	7–8
Description	<i>Required.</i> Specifies the File subcategory.

file

Positions	10–39
Description	<i>Required.</i> Specifies the name of the related file or ALL.
Format	4 alphanumeric or special characters (#, \$, @, and -)

Considerations

- ◆ With the REMOVE command, you can enter ALL. to remove the relationships between this Environment Description and its associated files.
- ◆ With the RELATIONSHIP DISPLAY command, you can enter ALL. to print the relationships between this Environment Description and its associated files.
- ◆ You cannot relate any files other than primary, related, index, Statistics Log, System Log, and Task Log Files to an Environment Description.
- ◆ You cannot use ALL. with the RELATE command.
- ◆ If you define a Directory File or a Task Log File in the bootstrap Environment Description and in the Environment Description on the Directory, the following statements are true:
 - The physical file descriptions and buffer information used by the PDM are obtained from the bootstrap Environment Description. The open modes for the Directory Files are obtained from the Environment Description on the Directory.
 - If you define a System Log File and/or a Statistics Log File in the bootstrap Environment Description and in the Environment Description on the Directory, the physical descriptions and buffer information are obtained from only the Environment Description on the Directory.
- ◆ You define file level log suppression through Directory Maintenance when you relate a file to your user Environment Description. For more information on the statements you make when relating a file to your user Environment Description, refer to the [SUPRA Server PDM Logging and Recovery Guide \(OS/390 & VSE\)](#), P26-2223.

Input statement 3—RELATE and RELATIONSHIP CHANGE commands only

open mode**Positions** 7–10**Description** *Required.* Indicates the type of open you want the PDM to perform.**Options** NONE Not opened during initialization

READ Read only

SUPD Shared update

Consideration Enter NONE for the Environment Description used by utilities. The Utility function performs the open.

buffer pool**Positions** 12–15**Description** *Required.* Identifies an existing buffer used by the file.**Format** 4 alphanumeric characters**Considerations**

- ◆ The Buffer Pool used by the Task Log, System Log, or Statistics Log File cannot be shared with database files.
- ◆ The Buffer Pool must already exist within the Environment Description.

task log option

Position	17
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress task logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for this file

Considerations

- ◆ If task logging is suppressed, then before and after image logging must also be suppressed.
- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options to ensure data integrity. The DBA is responsible for ensuring this so that data integrity and recoverability are not compromised.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no task logging, then this field is ignored.
- ◆ For the Directory Files C\$-D, C\$-#, C\$-N, C\$-S, and C\$-T, the task logging option is ignored.
- ◆ Suppressing task logging at the file level is only suggested for the MANTIS and SPECTRA slide files.

function log option

Position	19
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress system logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for the file.

Considerations

- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options. Refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250, for more information on independent file logging.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no function logging, then this field is ignored.
- ◆ The Directory Files C\$-D, C\$-#, C\$-N, C\$-S, C\$-T must have function logging=Y (unless the Environment Description specifies N).

after image log option

Position	21
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress system after image logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for the file

Considerations

- ◆ If task logging is suppressed, then before and after image logging must also be suppressed.
- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options. Refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no after image logging, then this field is ignored.
- ◆ The Directory Files C\$-D, C\$-#, C\$-N, C\$-S, and C\$-T must have after image logging=Y (unless the Environment Description specifies N).
- ◆ Suppressing after image logging at the file level is only suggested for the MANTIS and SPECTRA slide files.
- ◆ For KSDS files the system before image logging option and the system after image logging option must be the same.

before image log option

Position	23
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress system before image logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for the file

Considerations

- ◆ If task logging is suppressed, then before and after image logging must also be suppressed.
- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no before image logging, then this field is ignored.
- ◆ The Directory Files C\$-D, C\$-#, C\$-N, C\$-S, and C\$-T must have before image logging=Y (unless the Environment Description specifies N).
- ◆ Suppressing before image logging at the file level is only suggested for the MANTIS and SPECTRA slide files.
- ◆ For KSDS files the system before image logging option and the system after image logging option must be the same.

Environment Description/Logical Views relationship

Use the following input statements to establish, change, print, or remove relationships between an Environment Description and its associated Logical Views. Use only the first two input statements to print or remove the relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship data RD Display (print) relationship data RL Establish relationship RM Remove relationship

ED

Positions	4–5
Description	Specifies the Environment Description category.

environment description

Positions	7–36
Description	<i>Required.</i> Identifies the name of the Environment Description for which the relationship is being maintained.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.

Input statement 2

LV

Positions	7–8
Description	<i>Required.</i> Specifies the Logical View subcategory.

logical view

Positions	10–39
Description	<i>Required.</i> Specifies the name of the related Logical View or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ With the RELATIONSHIP DISPLAY command, you can enter ALL. to print the relationships between this Environment Description and its associated Logical Views.
- ◆ With the REMOVE command, you can enter ALL. to remove the relationships between this Environment Description and its associated Logical Views.
- ◆ You cannot use ALL. with the RELATE or RELATIONSHIP CHANGE command.

Input statement 3—RELATE and RELATIONSHIP CHANGE commands only

open mode

Positions	7–10
Description	<i>Optional.</i> Indicates the type of open you want the RDM to perform.
Options	NONE Not opened during initialization READ Read only WUPD Shared update

Consideration The RDM currently does not use this information.

STRUCTURE DISPLAY: Environment Description

Use the following input statements to list the Environment Description's associated Buffer Pools, Files, Log Groups, and Logical Views. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

ED	
Positions	4–5
Description	<i>Required.</i> Specifies the Environment Description category.

environment description	
Positions	7–36
Description	<i>Required.</i> Specifies the Environment Description name.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.

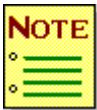
Input statement 2

subcategory code	
Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	BP Buffer Pool FI File LG Log Group LV Logical View
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

File

The File category describes the physical characteristics of your database files. The File category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/CHANGE: File” on page 270)
- ◆ RELATIONSHIP CHANGE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: File” on page 294)
- ◆ CHANGE (“ADD/CHANGE: File” on page 270)
- ◆ RELATIONSHIP DISPLAY (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: File” on page 294)
- ◆ CHECK (“CHECK: File” on page 288)
- ◆ REMOVE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: File” on page 294)
- ◆ COPY (“COPY: File” on page 290)
- ◆ RENAME (“RENAME” on page 504)
- ◆ DELETE (“DELETE: File” on page 292)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: File” on page 303)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ UTILITIES (“UTILITIES: File” on page 305)
- ◆ RELATE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: File” on page 294)



Changes made to a file during active schema maintenance are made to the Directory only. To reflect those changes in the current PDM, close the file with the CLOSE command, and then reopen the file with the OPEN command (see “UTILITIES: File” on page 305). You may not change, delete, or rename a file once it is marked consistent by the schema Consistency Check.

General considerations

- ◆ When you rename a file, you must change the file name in the Access Sets that refer to the renamed file and rename some Physical Fields. For example, the control key Physical Field for a primary file must be the file name followed by CTRL. The ROOT, CODE, and Linkpath Physical Fields also use the file name. A renamed file, its Internal Records, and the schema to which it belongs are all marked as inconsistent.
- ◆ For information on how to add a file, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.
- ◆ You may not delete and re-add or rename a file when you are running with system logging without compromising your Disaster Recovery capability.

Naming data transaction

Enter this statement only if you have not entered the naming data during this run.

```
00000000011111111122222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
```

SC

Positions	4–5
Description	<i>Required.</i> Specifies the schema category.

schema

Positions	7–36
Description	<i>Required.</i> Identifies an existing schema qualifying this file.
Format	1–8 alphanumeric or special characters (#, \$, and @)

ADD/CHANGE: File

Use the following input statements to add a File entity to the specified schema. Use only the first four statements when changing a File entity. Use Input Statements 5 and 6 to enter the RDM options for BASE. Internal Records. Directory Maintenance automatically adds BASE. Internal Records; therefore, you cannot add these options with an Internal Record ADD statement.



You must use a separate Input Statement 5 for the ADD and CHANGE commands. Input Statement 5a is for the ADD command, and Input Statement 5b is for the CHANGE command.

General considerations

If you change a file during active schema maintenance with system logging and the file was previously consistent, the following fields cannot be changed:

- ◆ DDNAME
- ◆ FILE TYPE
- ◆ ACCESS METHOD
- ◆ LOGICAL RECORD LENGTH
- ◆ VSAM CONTROL INTERVAL
- ◆ TOTAL LOGICAL RECORDS
- ◆ BLOCKS PER TRACK
- ◆ TOTAL TRACKS
- ◆ CODED RECORD INDICATOR
- ◆ VSE INDICATOR
- ◆ OLD FILE INDICATOR
- ◆ TOTAL VSAM CNTRL INTVL

If you change the following fields in the File category, Directory Maintenance will automatically mark the Entity and Schema inconsistent:

- ◆ ACCESS METHOD
- ◆ TOTAL LOGICAL RECORDS
- ◆ BLOCKS PER TRACK
- ◆ TOTAL TRACKS
- ◆ CODED RECORD INDICATOR
- ◆ TOTAL VSAM CONTROL FILE TYPE
- ◆ INTERVALS
- ◆ LOGICAL RECORD LENGTH
- ◆ VSAM CONTROL INTERVAL
- ◆ OLD FILE INDICATOR
- ◆ VSE INDICATOR

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

FI

Positions	4–5
Description	<i>Required.</i> Specifies the File category.

file**Positions** 7–36**Description** *Required.* Identifies the file being processed.**Format** 3–17 alphanumeric or special characters (#, \$, @, and -)**Considerations**

- ◆ The first character must be alphabetic, #, \$, or @. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, @, and -.
- ◆ If you use @ as the null character, do not use @ as the first character of the file name.
- ◆ Each file name must be unique within a schema.
- ◆ You do not need to enter this name if it is the same as the preceding file name entered during this run.
- ◆ For DL/1 users, the file name may contain 30 characters and is the concatenation of the DBD and segment names. Use a hyphen as the delimiter between the DBD and segment names, for example, xxxxxxxx-yyyyyyyy

where:

- xxxxxxxx represents a valid DBD name
- yyyy-yyyy represents a valid segment name as defined in *the IMS/VS Utilities Reference Manual*, SH20-9029, from IBM.
- ◆ Changes made to a file during active schema maintenance are made to the Directory only. To reflect those changes in the current PDM, close the file with the CLOSE command, and then reopen the file with the OPEN command. (See “**UTILITIES: File**” on page 305.) You cannot change, delete, or rename a file once it is marked consistent by the schema Consistency Check.

Input statement 2

ddname

Positions	7–14
Description	<i>Optional.</i> Indicates the ddname of the file.
Default	File name
Format	For OS/390: 1–8 alphanumeric characters For VSE: 1–7 alphanumeric characters For IMS: 1–8 alphanumeric characters

Considerations

- ◆ The ddname must not contain hyphens. If you allow this field to default to the file name and the file name contains a hyphen, Directory Maintenance returns an error.
- ◆ For DL/1 users, the ddname specifies the ddname of the primary data set in this data set group. IMS/VS use of the data set indicated depends on the type of database being defined. For special considerations on ddname definitions, refer to the *IMS/VS Utilities Reference Manual*, SH20-9029, from IBM.

data set name

Positions	16–59
Description	<i>Optional.</i> Indicates the OS/390 dsname or the VSE DLBL name of the file.
Format	1–44 alphanumeric characters

Considerations

- ◆ Use standard, operating-system-naming conventions.
- ◆ If you specify the data set name for an OS/390 File, you do not need to specify the file name in your JCL. The file will be dynamically allocated to the job. However, if you do specify the data set name in your JCL, this definition is not used.

Input statement 3

file type

Positions	7–13
Description	<i>Required.</i> Indicates the type of file being processed.
Format	1–7 alphabetic characters
Options	For PDM Files:

- ◆ INDEX Index File
- ◆ PRIMARY PDM primary File
- ◆ RELATED PDM related File
- ◆ TASKLOG Task Log File
- ◆ SYSTLOG System Log File
- ◆ STATLOG Statistics Log File

For non-PDM Files:

- ◆ SEQ User sequential file
- ◆ WORK Work file
- ◆ OTHER For example, VSAM File
- ◆ HDAM DL/1 hierarchical direct access method
- ◆ HIDAM DL/1 hierarchical indexed direct access method

Considerations

- ◆ Internal Records for the file are inconsistent if you change the File Type field from PDM to non-PDM or from non-PDM to PDM.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

access method

Positions	15–18	
Description	<i>Required.</i> Indicates the access method used for this file.	
Options	BDAM	OUTP
	QSAM	QSAM
	ESDS	RDS
	ISAM	WORK
	KSDS	ISAM
	OSAM	

Considerations

- ◆ These access methods must be compatible with the File Type field as follows:

File type	Valid access method
INDEX	BDAM, ESDS
PRIMARY	BDAM, ESDS, KSDS
RELATED	BDAM, ESDS
TASKLOG	BDAM, ESDS
SYSTLOG	BDAM, ESDS, BSAM, OUTP, WORK
STATLOG	BSAM, OUTP, WORK
SEQ	BSAM, ESDS, OUTP, QSAM, WORK
WORK	BSAM, ESDS, OUTP, QSAM, WORK
OTHER	BDAM, BSAM, ESDS, KSDS, OUTP, QSAM, RRDS, WORK
HDAM	OSAM, ESDS
HIDAM	ISAM, KSDS

- ◆ The access method must also be compatible with the Device Type field as follows:

File type	Valid access method
3310, 3370, FBA	BSAM, ESDS, KSDS, QSAM, RRDS
VSAM	ESDS, KSDS, RRDS
TAPE, CARD	BSAM, OUTP, QSAM, WORK
All others	BDAM, BSAM, ESDS, ISAM, KSDS, OUTP, QSAM, RRDS, WORK

- ◆ Access methods OUTP and WORK are designed for VSE System Log Files where the Device Type field is TAPE.
 - OUTP Specifies an OUTPUT File, uses VSE real multivolume support, and does not overlap I/O.
 - WORK Specifies a WORK File and allows the PDM to fully overlap I/O. Multivolume support is simulated by the PDM (the PDM closes the file, issues volume change messages to the operator, and reopens the file).
- ◆ Under OS/390, and for files other than tape System Log Files under VSE, OUTP and WORK are processed identically to the BSAM access method.
- ◆ When defining ESDS PDM files using IDCAMS:
 - RECORDSIZE must specify the value calculated by Directory Maintenance for BLOCKSIZE.
 - RECORDS must specify the value calculated by Directory Maintenance for TOTAL VSAM CNTRL INTVL.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

device type

Positions 20–23

Description *Required.* Indicates the device type where the file resides.

Options

2311	3375
2314	3380
3310	3390
3330	VSAM
3340	FBA
3344	TAPE
3350	CARD
3370	

Consideration The Device Type field cannot be TAPE for a VSE Statistics Log File.

device assignment

Positions 25–27

Restriction Valid only for VSE.

Description *Optional.* Specifies the logical unit assignment.

Options

0–240
RDR
IPT
PCH
LST
SLB

logical record length

- Positions** 29–35
- Description** *Required.* Indicates the logical record length in the file.
- Options** 1–32,767

Considerations

- ◆ The minimum for primary and related BDAM Files or ESDSs is 21.
- ◆ The minimum for primary KSDSs is 21 plus the control key length and control key displacement.
- ◆ This value also determines the block size used for System Log, Task Log, Statistics Log, and index files. These are the minimum values:

File type	Access method	Block size
Task Log	BDAM	512
	ESDS	505
System Log	BDAM	512
	ESDS	505
	BSAM	512
Statistics Log	BSAM	512
Index	BDAM	512
	ESDS	505

- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

total logical records

Positions	37–46
Restriction	PDM Files, Task Log Files, System Log Files, and index files only.
Description	<i>Optional.</i> Indicates the number of logical records in the file.
Options	0 or 2–2,147,483,647

Considerations

- ◆ If you enter a value other than 0, the following are true:
 - The minimum value is 2.
 - The values of the Total Tracks and Total VSAM Control Interval fields must be 0.
 - Directory Maintenance uses this value during the Consistency Check to calculate the number of tracks.
- ◆ This field is ignored for KSDS files.
- ◆ If you enter a value for a nontape System Log File, Directory Maintenance uses the value to calculate the Volume Maximum Block Number field (see “[ADD/CHANGE: Log Group](#)” on page 338).
- ◆ If you use Log Groups, you must enter a nonzero value to enable log switching.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

total tracks

Positions 48–52

Restriction Invalid for VSAM access methods.

Description *Optional.* Indicates the size in tracks of the file.

Options 0–65,535

Considerations

- ◆ If you enter a value other than 0, the following are true:
 - The value of the Total Logical Records field must be 0.
 - Directory Maintenance uses this value during the Consistency Check to calculate the Total Logical Records field.
- ◆ For VSE only, increase the value of this field by 1 to allow for the EOF record.
- ◆ If the Total Logical Records field is not 0, this field must be 0.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

records per block/control interval

Positions 54–60

Description *Required* for non-VSAM Files. *Optional* for VSAM Files. Indicates the number of records per block for non-VSAM Files or the records per control interval for VSAM Files.

Options 0–32767

Considerations

- ◆ Enter 1 for Task Log, System Log, Statistics Log, and index files.
- ◆ For non-VSAM Files, if you enter a value other than 0, the Blocks Per Track field must be 0.
- ◆ For VSAM Files, the value of this field is calculated during Consistency Check. The calculated value overrides the value you entered if different.
- ◆ This option is preferred if you have newer DASD drives (3390s).

blocks per track

Positions 62–68

Restriction Invalid if the Access Method field is BSAM, QSAM, or VSAM, or the Device Type field is CARD or TAPE.

Description *Optional*. Indicates the number of blocks (physical records) stored per track for the file.

Format 1–7 numeric characters

Considerations

- ◆ If you enter a value other than 0, the Records Per Block field must be 0.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.
- ◆ Do not use this option if you have newer DASD drives; it can cause problems (3390s).

Input statement 4

vsam control interval**Positions** 7–13**Description** *Optional* for non-VSAM Files. *Required* for VSAM Files. Indicates the size of the VSAM control interval you want used when accessing the file.**Format** 1–7 numeric characters**Considerations**

- ◆ This field is valid only for VSAM Files (ESDS or RRDS). For KSDSs, this field is used for documentation only.
- ◆ If you enter a value less than or equal to 4096 (4K), it must be evenly divisible by 512.
- ◆ If you enter a value greater than 4096, it must be evenly divisible by 2048 (2K).
- ◆ To calculate the value, multiply the value of the Logical Record Length field times the value of the Records per Block/Control Interval field and add 7, then round up to the appropriate multiple (see second and third bullet above).
- ◆ If you change this field, Directory Maintenance will automatically mark the entity and schema inconsistent.

total vsam control intervals**Positions** 15–24**Description** *Optional*. Indicates the total number of VSAM control intervals allocated to the file.**Options** 0–2,147,483,647**Considerations**

- ◆ This field is valid only for VSAM Files and is ignored for KSDS.
- ◆ If you enter a value other than 0, the Total Logical Records field must be 0.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

site exit name	Positions	26–33	Not applicable to this release.
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site table name	Positions	35–64	Not applicable to this release.
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coded record indicator

Position	66
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Description	<i>Required.</i> Indicates whether the file contains coded records.
--------------------	---

Options	Y Yes
----------------	-------

	N No
--	------

Considerations

- ◆ Must be N for all files except related files.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

vse indicator

Position	68
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Description	<i>Conditional. Required</i> for OS/390. Indicates whether the file was created under VSE.
--------------------	--

Options	Y Yes
----------------	-------

	N No
--	------

Considerations

- ◆ If you enter Y, ensure that the value of the Total Tracks field or the Total Logical Records field allows for the track used by the EOF (end-of-file) record.
- ◆ Directory Maintenance automatically sets this field to Y for files created under VSE.
- ◆ If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

old file indicator

Position	70
Description	<i>Optional.</i> Indicates whether the file was created by a nonoptimizing DBGEN.
Options	Y Yes N No
Consideration	If you change this field, Directory Maintenance will automatically mark the Entity and Schema inconsistent.

Input statement 5a—ADD command only

For CHANGE command see Input statement 5b.

<i>get valid option</i>	Position	7	Not applicable to this release.
<i>before get exit</i>	Positions	9–16	Not applicable to this release.
<i>after get exit</i>	Positions	18–25	Not applicable to this release.
<i>replace valid option</i>	Position	27	Not applicable to this release.
<i>before replace exit</i>	Positions	29–36	Not applicable to this release.
<i>after replace exit</i>	Positions	38–45	Not applicable to this release.
<i>insert valid option</i>	Position	47	Not applicable to this release.
<i>before insert exit</i>	Positions	49–56	Not applicable to this release.
<i>after insert exit</i>	Positions	58–65	Not applicable to this release.
<i>delete valid option</i>	Position	67	Not applicable to this release.

Input statement 5b—CHANGE command only

root indicator

Position	7 DL/I
Description	<i>Conditional.</i> Indicates if the DL/I file (segment) being defined is the database “root” segment.
Options	Y Yes N No

Considerations

- ◆ If this field is N, then DL/I Parent Name must be specified.
 - ◆ If this field is Y, then DL/I Parent Name must not be specified.
 - ◆ This field is valid for DL/I Files only. It is ignored for all other files.
-

variable length indicator

Position	9 DL/I
Description	<i>Conditional.</i> Indicates if the DL/I File (segment) being defined is a variable length segment.
Options	Y Yes N No

Consideration Valid for DL/I Files only. Ignored for all other file types.

DL/I parent segment

Positions	11–27
Description	<i>Conditional.</i> Specifies the name of the DL/I file (segment) that is the actual physical parent segment in the DL/I Database definition.
Format	3–17 alphanumeric characters

Considerations

- ◆ When DL/I root indicator is Y, this field must be blank.
- ◆ When DL/I root indicator is N, this field must be specified.
- ◆ The DL/I File (segment) name specified must already exist on the directory.

Input statement 6—ADD command only

before delete exit **Positions** **7–14** Not applicable to this release.

after delete exit **Positions** **16–23** Not applicable to this release.

DL/I root indicator

Position 25

Description *Conditional.* Indicates if the DL/I file (segment) being defined is the database “root” segment.

Options Y Yes
 N No

Considerations

- ◆ If this field is N, DL/I parent name must be specified.
- ◆ If this field is Y, DL/I parent name must not be specified.
- ◆ This field is valid for DL/I Files only. It is ignored for all other files.

DL/I variable length indicator

Position 27

Description *Conditional.* Indicates if the DL/I File (segment) being defined is a variable length segment.

Options Y Yes
 N No

Consideration Valid for DL/I Files only. Ignored for all other file types.

DL/I parent segment

Position 29–45

Description *Conditional.* Specifies the name of the DL/I file (segment) that is the actual physical parent segment in the DL/I Database definition.

Format 3–17 alphanumeric characters

Considerations

- ◆ If DL/I root indicator is Y, this field must be blank.
- ◆ If DL/I root indicator is N, this field must be specified.
- ◆ The DL/I File (segment) name specified must already exist on the directory.

CHECK: File

Use the following input statements to perform a Consistency Check on a file:



You may omit this step if you do SC CK.

Input statement 1

CK

Positions 1–2

Description *Required.* Specifies the CHECK command.

FI

Positions 4–5

Description *Required.* Specifies the file category.

file

Positions 7–36

Description *Required.* Identifies the file on which the Consistency Check will be performed.

Format 4 alphanumeric or special characters (#, \$, @, and -)

Consideration You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

check all internal records and secondary keys

Position	7
Description	<i>Optional.</i> Specifies whether to perform the Consistency Check on all Internal Records and Secondary Keys in this file.
Default	N
Options	Y Yes N No
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

check inconsistent internal records and secondary keys

Position	9
Description	<i>Optional.</i> Specifies whether to perform the Consistency Check on only the inconsistent Internal Records and Secondary Keys.
Default	Y
Options	Y Yes N No
Consideration	You must enter Y in either this field or the Check All Internal Records and Secondary Keys field.

COPY: File

Use the following input statements to copy an existing File entity from one schema (source) to another (target). The target file name is the same as the source file name and is not entered. If you want to change the copied file name, use the RENAME command after you copy the File entity. However, consider carefully before changing a file name.

Input statement 1

CO	
Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

FI	
Positions	4–5
Description	<i>Required.</i> Specifies the file category.

<i>file</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the file you want to copy.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

target schema

Positions 7–36

Description *Required.* Identifies the schema to which you want to copy the file.

Format 1–8 alphanumeric or special characters (#, \$, and @)

Consideration You do not need to enter this name if it is the same as the preceding file name entered during this run.

copy external fields

Position 38

Description *Optional.* Indicates whether to copy all External Field definitions for this file to the new schema.

Default Y

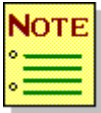
Options Y Yes
N No

Considerations

- ◆ If you enter N, Directory Maintenance does not copy the External Fields and does not relate them to the new file even if the External Fields exist in the target schema.
- ◆ If you enter Y, Directory Maintenance copies the External Fields that do not already exist in the target schema. If the External Fields already exist in the target schema, Directory Maintenance relates them to the new file and the associated Physical Fields as long as they are not already related to a Physical Field.

DELETE: File

Use the following input statements to delete a File entity:



If the file to be deleted contains a Secondary Key or is an index file related to the Secondary Key, and if the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, you cannot delete the file.

Input statement 1

DE	
Positions	1–2
Description	Required. Specifies the DELETE command.

FI	
Positions	4–5
Description	Required. Specifies the file category.

file	
Positions	7–36
Description	Required. Identifies the file being deleted.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

remove lv option

Position	7
Description	<i>Optional.</i> Specifies whether to remove the External Fields defined for the file from any related Logical Views.
Default	N
Options	Y Yes N No
Consideration	If the Delete XF Option field is Y, Directory Maintenance sets this field to Y.

delete xf option

Position	9
Description	<i>Optional.</i> Specifies whether to delete the External Fields defined for this file.
Default	N
Options	Y Yes N No

**RELATE/RELATIONSHIP CHANGE/RELATIONSHIP
DISPLAY/REMOVE: File**

Use the following input statements to establish or remove relationships between a file and its associated Environment Descriptions and Secondary Keys. You can also change or print Environment Description relationships. To list a file's relationships, use the STRUCTURE DISPLAY command described in "STRUCTURE DISPLAY: File" on page 303.

This section includes the File/Environment Descriptions and File/Secondary Keys relationships. The input statements for each subcategory are described separately.

File/Environment Descriptions relationship

Use the following input statements to relate or change the relationship between a file and its associated Environment Descriptions. Use only the first two statements to remove or print these relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship data RD Display (print) relationship data RL Establish relationship RM Remove relationship

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file

Positions	7–36
Description	<i>Required.</i> Specifies the name of the file being processed.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

ED

Positions 7–8

Description *Required.* Specifies the Environment Description subcategory.

environment description

Positions 10–39

Description *Required.* Specifies the name of the related Environment Description or ALL.

Format 1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Environment Description name entered during this run.
- ◆ You cannot use ALL. with the RELATE command.
- ◆ With the RELATIONSHIP DISPLAY command, you can enter ALL. to print all existing relationships between the file and its associated Environment Descriptions.
- ◆ With the REMOVE command, you can enter ALL. to remove all existing relationships between the file and its associated Environment Descriptions.
- ◆ If you define a Directory File or a Task Log File in the bootstrap Environment Description and in the Environment Description on the Directory, the following statements are true:
 - The physical file descriptions and buffer information used by the PDM are obtained only from the bootstrap Environment Description.
 - The open modes for the Directory Files are obtained only from the Environment Description on the Directory.
- ◆ If you define a System Log File and/or a Statistics Log File in the bootstrap Environment Description and in the Environment Description on the Directory, the physical descriptions and buffer information are obtained only from the Environment Description on the Directory.
- ◆ You cannot relate an Environment Description to a non-PDM File. PDM user Files, Task Log Files, System Log Files, and Statistics Log Files are PDM Files.

Input statement 3—RELATE and RELATIONSHIP CHANGE commands only

open mode

Positions	7–10
Description	<i>Required.</i> Indicates the type of open you want the PDM to perform.
Options	NONE Not opened during initialization READ Read only SUPD Shared update
Consideration	Enter NONE for the Environment Description used by utilities. The Utility function performs the open.

buffer pool

Positions	12–15
Description	<i>Required.</i> Identifies the Buffer Pool used by the file.
Format	1–4 alphanumeric or special characters (#, \$, and @)
Considerations	<ul style="list-style-type: none">◆ The Buffer Pool used by the Task Log, System Log, and Statistics Log Files cannot be shared with database files.◆ The Buffer Pool must already exist within the Environment Description.

task log option

Position	17
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress task logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for this file

Considerations

- ◆ Data integrity is compromised if task logging is suppressed.
- ◆ If task logging is suppressed, then before and after image logging must also be suppressed.
- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options. Refer to the [SUPRA Server PDM Logging and Recovery Guide \(OS/390 & VSE\)](#), P26-2223, for more information on independent file logging.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no task logging, then this field is ignored.
- ◆ The Directory Files C\$-D, C\$-#, C\$-N, C\$-S, and C\$-T must have task logging=Y (unless the Environment Description specifies N).

function log option

Position	19
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress system logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for the file.

Considerations

- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options. Refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250, for more information on independent file logging.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no function logging, this field is ignored.
- ◆ The Directory Files C\$-D, C\$-#, C\$-N, C\$-S, and C\$-T must have function logging=Y (unless the Environment Description specifies N).

after image log option

Position	21
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress system after image logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for the file

Considerations

- ◆ Data integrity is compromised in disaster recovery situations when before and after image logging is suppressed.
- ◆ If task logging is suppressed, then before and after image logging must also be suppressed.
- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options. Refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no after image logging, this field is ignored.
- ◆ The Directory Files C\$-D, C\$-#, C\$-N, C\$-S, and C\$-T must have after image logging=Y (unless the Environment Description specifies N).
- ◆ For KSDS files the system before image logging option and the system after image logging option must be the same.

before image log option

Position	23
Restriction	For SUPRA Release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to suppress system before image logging for a particular file.
Options	Y Logging will be performed as per the Environment Description N Logging will be suppressed for the file

Considerations

- ◆ Data integrity is compromised in disaster recovery situations when before and after image logging is suppressed.
- ◆ If task logging is suppressed, then before and after image logging must also be suppressed.
- ◆ All interconnected primary, related, and index files must have the same task, system before, and system after image logging options. Refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.
- ◆ Logging suppress options are only considered if the Environment Description specifies that particular type of PDM logging. If the Environment Description specifies no before image logging, this field is ignored.
- ◆ The Directory Files C\$-D, C\$-#, C\$-N, C\$-S, and C\$-T must have before image logging=Y (unless the Environment Description specifies N).
- ◆ For KSDS files the system before image logging option and the system after image logging option must be the same.

File/Secondary Keys relationship

Use the following input statements to relate or remove the relationship between an index file and its associated Secondary Keys.



If the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, then the REMOVE command is not allowed.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship data RM Remove relationship

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

index file

Positions	7–36
Description	<i>Required.</i> Specifies the name of the index file being processed.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

SK

Positions	7–8
Description	<i>Required.</i> Specifies the Secondary Key subcategory.

qualifying database file

Positions	10–39
Description	<i>Required.</i> Specifies the name of the primary or related database file that qualifies the Secondary Key.
Format	4 alphanumeric or special characters (#, \$, @, and -)

secondary key

Positions	41–70
Description	<i>Required.</i> Specifies the name of the related Secondary Key or ALL.
Format	8 alphanumeric or special characters (#, \$, @, and -)

Considerations

- ◆ With the RELATE command, ALL. relates each existing Secondary Key that is not already related to the index file. After using the RELATE command with ALL., use the STRUCTURE DISPLAY command to verify the Secondary Key names.
- ◆ With the REMOVE command, ALL. deletes all existing relationships between the index file and its associated Secondary Keys.
- ◆ Use the following formula to calculate the maximum number of Secondary Keys in an index file:
$$(\text{blocksize}/128) - 1$$
- ◆ The PDM uses the index File-to-Secondary Key relationship to determine where to build the index structure for this Secondary Key when the file utilities POPULATE command is executed.

STRUCTURE DISPLAY: File

Use the following input statements to list the file's associated Buffer Pools, External Fields, Internal Records, Key Codes, Physical Fields, and Secondary Keys. You must use both input statements to list each structure.

Input statement 1

SD

Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file

Positions	7–36
Description	<i>Required.</i> Specifies the file name.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

subcategory code

Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	BP Buffer Pool XF External Field IR Internal Record KC Key Code PF Physical Field SK Secondary Key

Consideration The table under “[Relationship categories and commands](#)” on page 50 shows the structure displayed for each subcategory.

UTILITIES: File

The Directory utilities provide for the management of database files. You must enable active schema maintenance before executing any of the utilities (see “**SPECIAL FUNCTION: Schema**” on page 398). The input statements for each utility are described separately:

- ◆ Close database files
- ◆ Format database files
- ◆ Open database files
- ◆ Depopulate Secondary Keys
- ◆ Populate Secondary Keys
- ◆ Reorganize Secondary Keys

Close File utility

Use the following input statements to close a primary or related PDM File and to purge the associated control blocks. It is not necessary to execute this utility for index files. The PDM automatically closes an index file when all files that contain a Secondary Key related to the index file have been closed. Therefore, if any file containing a Secondary Key related to the index file remains open, the index file will not be closed.

Input statement 1

UT

Positions	1–2
Description	<i>Required.</i> Indicates the execution of a utility.

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file

Positions	7–36
Description	<i>Required.</i> Identifies the file being processed.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the last file name entered during this run.

Input statement 2

CL

Positions 7–8

Description *Required.* Specifies the CLOSE subcommand.

Input statement 3

close mode

Positions 7–10

Description *Required.* Identifies how the file is closed.

Options COMP Complete close
PART Partial close
PURG Purge file description

Considerations

- ◆ If you enter COMP, the PDM logically and physically closes the file. The associated control blocks are not purged from memory.
- ◆ If you enter PART, the PDM leaves the file open but prevents updates to the file. The PDM does not close the file to the operating system or purge the associated control blocks from memory.
- ◆ If you enter CLOSE PURGE, the PDM purges the file's associated control blocks from the resident tables and frees the memory. Use this mode when the definition of the file has changed and you need to purge the old definition from the PDM before you use the OPEN command to pass the new definition to the PDM.

Format File utility

Use the following input statements to prepare a database file or index file for use. The file must be defined on the Directory, must be consistent, and must be closed.

Input statement 1

UT	
Positions	1–2
Description	<i>Required.</i> Indicates the execution of a utility.

FI	
Positions	4–5
Description	<i>Required.</i> Specifies the file category.

<i>file</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the file being processed.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the last file name entered during this run.

Input statement 2

FT	
Positions	7–8
Description	<i>Required.</i> Specifies the FORMAT subcommand.

Open File utility

Format the file before executing the Open File Utility. Use the following input statements to open a primary or a related PDM database file or refresh the file description. The index files are opened automatically by the PDM when the first PDM File, which contains a Secondary Key related to the index file, is opened.

Input statement 1

UT

Positions	1–2
Description	<i>Required.</i> Indicates the execution of a utility.

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file

Positions	7–36
Description	<i>Required.</i> Identifies the file being processed.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the last file name entered during this run.

Input statement 2

OP

Positions	7–8
Description	<i>Required.</i> Specifies the OPEN subcommand.

Input statement 3

open mode

- Positions** 7–10
- Description** *Required.* Identifies the type of access allowed when the file is opened.
- Options** EUPD Exclusive update (only by the task issuing the open)
- IUPD Intent to update
- READ Read only
- SUPD Shared update
- NONE Refresh the file description

Consideration If you enter NONE, the file is not opened. The file description is refreshed (read) from the file’s definition held on the Directory. However, you do not need to refresh the file description if the file was closed with PURG. The file description is automatically refreshed the next time the file is accessed.

Depopulate Secondary Keys utility

Use the following input statements to depopulate Secondary Keys. Use the Depopulate utility to make Secondary Keys unavailable for use.

General considerations

- ◆ You can only depopulate Secondary Keys, which are already populated and usable, *unless* you depopulate using Purge Option =Y on a Secondary Key, which was depopulated with Purge Option=N.
- ◆ When using the Depopulate utility in batch, the Directory access method on the user Environment Description must be SUPD.

Input statement 1

UT

Positions	1–2
Description	<i>Required.</i> Indicates the execution of a utility.

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file

Positions	7–36
Description	<i>Required.</i> Identifies the primary or related file that contains the Secondary Key
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

DP	
Positions	7–8
Description	<i>Required.</i> Specifies the DEPOPULATE subcommand.

secondary key

Positions	10–17
Description	<i>Required.</i> Specifies the Secondary Key name or ALL.
Format	8 alphanumeric or special characters (#, \$, @, and -)
Consideration	You can enter ALL. to perform the DEPOPULATE utility on all Secondary Keys in the specified file.

Input statement 3

purge option	
Position	7
Description	<i>Required.</i> Indicates whether to remove the index information for the Secondary Key from the index file.
Options	Y Yes N No
Consideration	If you enter N, Directory Maintenance marks the Secondary Key as unusable. Before the Secondary Key can be populated again, you must depopulate it with this option set to Y.

Populate Secondary Keys utility

Use the Populate utility to construct the index information, thereby making the Secondary Keys available for use.

Before you use the Populate utility, close the primary or related files whose Secondary Keys you want to populate. To close the file, use the Close utility and set the Close Mode field to COMP.

Input statement 1

UT

Positions	1–2
Description	<i>Required.</i> Indicates the execution of a utility.

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file

Positions	7–36
Description	<i>Required.</i> Identifies the primary or related file that contains the Secondary Key.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

PP

Positions	7–8
Description	<i>Required.</i> Specifies the POPULATE subcommand.

secondary key

Positions	10–17
Description	<i>Required.</i> Specifies the Secondary Key name or ALL.
Format	8 alphanumeric or special characters (#, \$, @, and -)
Consideration	You can enter ALL. to perform the POPULATE utility on all Secondary Keys in the specified file. If the Secondary Key is not already populated, the utility populates it.

Input statement 3

load density

Positions	7–8
Description	<i>Required.</i> Specifies the packing density to be used while populating the Secondary Key.
Options	0–99
Consideration	If 0 is specified, the Load Density for the Secondary Key is used.

Reorganize Secondary Keys utility

Use the following input statements to reorganize an existing Secondary Key structure. This utility allows you to rebuild an existing tree structure without accessing the primary or related data file.

General considerations

- ◆ The Secondary Key must already exist on the index file, and must be marked populated and usable.
- ◆ The data file must be closed by File Utilities.

Input statement 1

UT

Positions	1–2
Description	<i>Required.</i> Indicates the execution of a utility.

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file name

Positions	7–36
Description	<i>Required.</i> Identifies the file being processed.
Format	4 alphanumeric or special characters (#, \$, @, -)
Consideration	You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 2

RO

Positions 7–8

Description *Required.* Specifies the Secondary Key name.

secondary key

Position 10–17

Description *Required.* Specifies the Secondary Key name.

Format 4 alphanumeric or special characters (#, \$, @, -)

Consideration You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 3

load density

Positions 7–8

Description *Required.* Specifies the packing density to be used while populating the Secondary Key.

Options 0–99

Consideration If 0 is specified, the Load Density defined for the Secondary Key is used.

Internal Record

The Internal Record category defines the physical record layout, consisting of the base portion and the redefined portion of a record. The BASE. Internal Record establishes the physical record layout. Other Internal Records (redefined) allow for multiple record formats in the same PDM related file. Internal records serve as a link between Files and Physical Fields. The physical attributes of a given Internal Record are actually the accumulated result of all Physical Fields that are qualified by that Internal Record.

The Internal Record category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Internal Record**” on page 319)
- ◆ RELATE (“**RELATE/REMOVE: Internal Record**” on page 324)
- ◆ CHANGE (“**ADD/CHANGE: Internal Record**” on page 319)
- ◆ REMOVE (“**RELATE/REMOVE: Internal Record**” on page 324)
- ◆ CHECK (“**CHECK/DELETE: Internal Record**” on page 322)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ DELETE (“**CHECK/DELETE: Internal Record**” on page 322)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ STRUCTURE DISPLAY (“**STRUCTURE DISPLAY: Internal Record**” on page 326)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)

General consideration

The overlay Physical Field is the last nonlink Physical Field in the BASE. Internal Record.

Naming data transactions

Enter these statements only if you have not entered the naming data during this run.

```
00000000011111111122222222233333333334444444445555555556666666667777777778
12345678901234567890123456789012345678901234567890123456789012345678904
5  SC schema
FI file
```

Input statement 1

SC	
Positions	4–5
Description	Required. Specifies the schema category.

schema

Positions	7–36
Description	Required. Identifies an existing schema qualifying the file.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Input statement 2

FI	
Positions	4–5
Description	Required. Specifies the file category.

file

Positions	7–36
Description	Required. Identifies an existing file qualifying the Internal Record.
Format	4 alphanumeric or special characters (#, \$, @, and -)

ADD/CHANGE: Internal Record

Use the following input statements to add or change an Internal Record entity for the specified schema and file. Use Input Statements 2 and 3 to enter the RDM options for redefined Internal Records. Directory Maintenance automatically adds BASE. Internal Records when you add a file. See “**ADD/CHANGE: File**” on page 270 for instructions for entering RDM options for a BASE. Internal Record.



If the Internal Record contains a physical field which is part of a Secondary Key structure and if the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, the Internal Record cannot be changed.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

IR

Positions	4–5
Description	<i>Required.</i> Specifies the Internal Record category.

internal record

Positions	7–36
Restriction	Add only the redefined portion. Directory Maintenance automatically adds BASE. Internal Records when you add a file.
Description	<i>Required.</i> Identifies the Internal Record being added.
Format	2 alphanumeric or printable special characters

Considerations

- ◆ Each redefined Internal Record name must be unique within a file.
- ◆ You do not need to enter this name if it is the same as the preceding Internal Record name entered during this run.
- ◆ If you use @ as the null character, do not use @ as the first character of the Internal Record name.
- ◆ The BASE. Internal Record is the only Internal Record supported for primary files.

Input statement 2

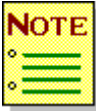
<i>get valid option</i>	Position	7	Not applicable to this release.
<i>before get exit</i>	Positions	9–16	Not applicable to this release.
<i>after get exit</i>	Positions	18–25	Not applicable to this release.
<i>replace valid option</i>	Position	27	Not applicable to this release.
<i>before replace exit</i>	Positions	29–36	Not applicable to this release.
<i>after replace exit</i>	Positions	38–45	Not applicable to this release.
<i>insert valid option</i>	Position	47	Not applicable to this release.
<i>before insert exit</i>	Positions	49–56	Not applicable to this release.
<i>after insert exit</i>	Positions	58–65	Not applicable to this release.

Input statement 3

<i>delete valid option</i>	Position	7	Not applicable to this release.
<i>before delete exit</i>	Positions	9–16	Not applicable to this release.
<i>after delete exit</i>	Positions	18–25	Not applicable to this release.

CHECK/DELETE: Internal Record

Use the following input statement to perform a Consistency Check or to delete an Internal Record entity. Use the second input statement only when deleting an Internal Record.



If the Internal Record contains a Physical Field, which is part of a Secondary Key structure, and if the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, then the Internal Record cannot be deleted.

Input statement 1

command code

- Positions** 1–2
- Description** *Required.* Specifies the command you want to execute.
- Options** CK Perform Consistency Check
DE Delete
- Consideration** You can delete only redefined Internal Records. If you attempt to delete a BASE. Internal Record, Directory Maintenance deletes all Physical Fields defined within the Internal Record but does not delete the BASE. Internal Record. An Internal Record without any Physical Fields will pass an Internal Record Consistency Check but will result in errors in subsequent checks of the file and schema. Therefore, define new Physical Fields for the Internal Record before performing a Consistency Check.

IR

- Positions** 4–5
- Description** *Required.* Specifies the Internal Record category.

internal record

- Positions** 7–36
- Description** *Required.* Identifies the Internal Record being processed.
- Format** 2 alphabetic or printable special characters, or BASE.
- Considerations**
- ◆ You do not need to enter this name if it is the same as the preceding Internal Record name entered during this run.
 - ◆ You cannot delete the BASE. Internal Record.

Input statement 2—DELETE command only

remove lv option

Position	7
Description	<i>Required.</i> Indicates whether to remove the External Fields that are related to Physical Fields contained in this Internal Record from any related Logical Views.
Options	Y Yes N No
Consideration	If the Delete XF Option field is Y, Directory Maintenance sets this field to Y.

delete xf option

Position	9
Description	<i>Required.</i> Indicates whether to delete the External Fields that are related to Physical Fields contained in this Internal Record.
Options	Y Yes N No

RELATE/REMOVE: Internal Record

Use the following input statements to establish or remove the relationship between the Internal Record and its associated Relations. To list an Internal Record's relationships, use the STRUCTURE DISPLAY command described in “**STRUCTURE DISPLAY: Internal Record**” on page 326.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

IR

Positions	4–5
Description	<i>Required.</i> Specifies the Internal Record category for the relationship.

internal record

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Internal Record for which the relationship is being maintained.
Format	2 alphanumeric or printable special characters, or BASE.
Consideration	You do not need to enter this name if it is the same as the preceding Internal Record name entered during this run.

Input statement 2

RE

Positions 7–8

Description *Required.* Specifies the Relation subcategory.

relation

Positions 10–39

Description *Required.* Specifies the name of the Relation related to this Internal Record.

Format 1–25 alphanumeric or special characters (#, \$, and -)

Consideration The schema qualifying the file that qualifies this Internal Record must already be related to this Relation and its qualifying Conceptual Schema.

STRUCTURE DISPLAY: Internal Record

Use the following input statements to list the Internal Record’s associated Physical Fields, External Fields, and Relations. You must use both input statement to list each structure

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

IR	
Positions	4–5
Description	<i>Required.</i> Specifies the Internal Record category.

<i>internal record</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the Internal Record name.
Format	2 alphabetic or printable special characters, or BASE.
Consideration	You do not need to enter this name if it is the same as the preceding Internal Record name entered during this run.

Input statement 2

<i>subcategory code</i>	
Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	PF Physical Field RE Relation XF External Field
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

Key Code

The Key Code category defines a Physical Field or combination of Physical Fields as a Secondary Key for an Internal Record. The Key Code category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD: Key Code” on page 330)
- ◆ RELATIONSHIP CHANGE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Key Code” on page 332)
- ◆ DELETE (“DELETE: Key Code” on page 331)
- ◆ RELATIONSHIP DISPLAY (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Key Code” on page 332)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ REMOVE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Key Code” on page 332)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ RELATE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Key Code” on page 332)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: Key Code” on page 335)

Naming data transactions

Enter these statements only if you have not entered the naming data during this run.

```
0000000001111111112222222223333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
FI file
SK secondary key
```

Input statement 1

SC

Positions	4–5
Description	Required. Specifies the schema category.

schema

Positions	7–36
Description	Required. Identifies an existing schema qualifying the file.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Input statement 2

FI**Positions** 4–5**Description** *Required.* Specifies the file category.

file**Positions** 7–36**Description** *Required.* Identifies an existing file qualifying the Secondary Key.**Format** 4 alphanumeric or special characters (@, \$, #, and -)**Input statement 3**

SK**Positions** 4–5**Description** *Required.* Specifies the Secondary Key category.

secondary key**Positions** 7–36**Description** *Required.* Identifies an existing Secondary Key qualifying the Key Code.**Format** 8 alphanumeric or special characters (#, \$, @, and -)

ADD: Key Code

If you add a Key Code named BASE., you cannot add any other Key Codes for that Secondary Key.



If the SK MAINTENANCE ALLOWED field is set to N for the Secondary Key, this command is restricted.

Use the following input statement to add a Key Code entity.

Input statement 1

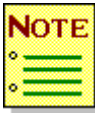
AD	
Positions	1–2
Description	<i>Required.</i> Specifies the ADD command.

KC	
Positions	4–5
Description	<i>Required.</i> Specifies the Key Code category.

<i>key code</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the Key Code being processed.
Format	2 alphanumeric or printable special characters, or BASE.
Considerations	<ul style="list-style-type: none">◆ The name is not required if it is the same as the previous Key Code already entered during this run.◆ Each Key Code must be unique within the Secondary Key.◆ If you use @ as the null character, do not use @ as the first character of the Key Code name.◆ The Key Code name must be the same as an existing Internal Record. If you rename the Internal Record, Directory Maintenance automatically renames the Key Code.

DELETE: Key Code

Use the following input statement to delete a Key Code entity.



If the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, the DELETE Key Code command is not allowed.

Input statement 1

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

KC

Positions	4–5
Description	<i>Required.</i> Specifies the Key Code category.

key code

Positions	7–36
Description	<i>Required.</i> Identifies the Key Code being deleted.
Format	2 alphanumeric or printable special characters, or BASE.
Consideration	You do not need to enter this name if it is the same as the preceding Key Code name entered during this run.

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: Key Code

Use the following input statements to establish, change, print, or remove relationships between a Key Code and its associated Physical Fields. Use only the first two input statements to remove or print the relationships. To list a Key Code's relationships, use the STRUCTURE DISPLAY command described in "STRUCTURE DISPLAY: Key Code" on page 335.



If the SK MAINTENANCE ALLOWED field is set to N for the Secondary Key, the RELATE and REMOVE Key Code commands are not allowed.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship data RD Display (print) relationship data RL Establish relationship RM Remove relationship

KC

Positions	4–5
Description	<i>Required.</i> Specifies the Key Code category.

key code

Positions	7–36
Description	<i>Required.</i> Identifies the Key Code being processed.
Format	2 alphanumeric or printable special characters, or BASE.

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Key Code name entered during this run.
- ◆ A Key Code named BASE. can be related to only Physical Fields in the BASE. Internal Record. However, any other Key Codes can be related to Physical Fields in the BASE. Internal Record and/or in the Internal Record with the same name as the Key Code.
- ◆ You cannot relate a ROOT or linkpath Physical Field to a Key Code.

Input statement 2

PF

Positions	7–8
Description	<i>Required.</i> Specifies the Physical Field subcategory for the relationship.

physical field

Positions	10–39
Description	<i>Required.</i> Specifies the name of the related Physical Field.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)
Considerations	<ul style="list-style-type: none">◆ An asterisk in the first position indicates a filler field.◆ You cannot relate a ROOT or linkpath Physical Field to a Key Code.

Input statement 3—RELATE and RELATIONSHIP CHANGE commands only

position for relate

Positions	7–36
Description	<i>Optional.</i> Specifies the position of this Physical Field relative to the location of the other Physical Fields related to the Key Code.
Default	END.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)
Options	BEG. First subelement END. Last subelement name Name of the Physical Field after which this Physical Field is positioned

<i>sequence field type</i>	Position 38	Not applicable to this release.
-----------------------------------	--------------------	---------------------------------

STRUCTURE DISPLAY: Key Code

Use the following input statements to list the Key Code's associated External Fields and Physical Fields. You must use both input statements to list each structure.

Input statement 1

SD

Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

KC

Positions	4–5
Description	<i>Required.</i> Specifies the Key Code category.

key code

Positions	7–36
Description	<i>Required.</i> Identifies the Key Code being processed.
Format	2 alphanumeric or printable special characters, or BASE.
Consideration	You do not need to enter this name if it is the same as the preceding Key Code name entered during this run.

Input statement 2

subcategory code

Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	XF External Field PF Physical Field
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

Log Group

The Log Group category connects one or more system log data sets to form a logical system log. The Log Group category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Log Group**” on page 338)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ CHANGE (“**ADD/CHANGE: Log Group**” on page 338)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ DELETE (“**DELETE: Log Group**” on page 344)

General considerations

- ◆ You cannot include a System Log File more than once within a Log Group.
- ◆ You cannot include a System Log File in more than one Log Group within an Environment Description.
- ◆ When you create, change, or delete a Log Group, the associated schema must pass a Consistency Check before the PDM can execute with it.
- ◆ Use the DISPLAY command to list all System Log Files associated with a Log Group.
- ◆ Use the STRUCTURE DISPLAY command for the Environment Description category to list all Log Groups associated with that Environment Description.
- ◆ A maximum of two Log Groups may exist for each Environment Description.

Naming data transactions

Enter these statements only if you have not entered the naming data during this run.

```
0000000001111111112222222223333333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
ED environment description
```

Input statement 1

SC

Positions	4–5
Description	Required. Specifies the schema category.

schema

Positions	7–36
Description	Required. Identifies an existing schema qualifying the Log Group.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Input statement 2

ED

Positions	4–5
Description	Required. Specifies the Environment Description category.

environment description

Positions	7–36
Description	Required. Identifies an existing Environment Description qualifying the Log Group.
Format	1–8 alphanumeric or special characters (#, \$, and @)

ADD/CHANGE: Log Group

Use the following input statements follow to add or change a Log Group entity.

General consideration

If you change the LOG FILE NAME 1–4 field and/or the LOG FILE MAX BLK # 1–4 field in the Attribute data, Directory Maintenance will automatically mark the Schema inconsistent.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

LG

Positions	4–5
Description	<i>Required.</i> Specifies the Log Group category.

log group

Positions	7–36
Description	<i>Required.</i> Identifies the Log Group being processed.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Log Group name entered during this run.
- ◆ The first character must be alphabetic, @, #, or \$. The remaining characters can be any combination of alphanumeric characters and the special characters (@, #, and \$).
- ◆ If you use @ as the null character, do not use @ as the first character of the Log Group name.
- ◆ Each Log Group name must be unique within an Environment Description.

Input statement 2

log wrap option

Position	7
Description	<i>Required.</i> Specifies whether the Log Group is to reuse the first log file in the group when the final log file has been filled.
Options	Y Yes N No

Considerations

- ◆ If a tape file is included in the Log Group, you must enter N.
- ◆ If the Log Group contains only one file, you must enter N.

logging synchronization option

Position	9
Description	<i>Required.</i> Specifies whether you want before images written to the System Log File before the data file is updated.
Options	Y Yes N No

Considerations

- ◆ Recoverability may be endangered if you enter N, since SUPRA will not force the physical output of records to the System Log File before writing records to database files.
- ◆ Specifying N may result in more economical use of System Log File space and may be desired when executing noncritical tasks.

Input statement 3

first log file

Positions 7–10

Description *Required.* Specifies the name of the first System Log File you want to include in the Log Group.

Format 4 alphanumeric or special characters (#, \$, @, and -)

Considerations

- ◆ The file name must be the name of a System Log File that is related to the Environment Description.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

first log file maximum volume block number

Positions 12–21

Restriction Valid for BSAM Files only.

Description *Optional.* Specifies the maximum number of blocks you want used in one volume of the System Log File before SUPRA switches to the next volume of the System Log File.

Options 0–2,147,483,647

Considerations

- ◆ If the System Log File is a BSAM file, you can enter 0 and let the maximum volume block number equal the total logical records for the file.
- ◆ **OS/390** If the System Log file is a BSAM file and you do not enter a value, ensure that the value of the total logical records is acceptable for use as the maximum volume block number.
- ◆ **VSE** If the System Log File is a BSAM file, enter the total number of blocks to be allocated for the file minus the number of system log buffers. In the System Log File definition, set total logical records, total tracks, and blocks per track to zero.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

second log file**Positions** 23–26**Description** *Optional.* Specifies the name of the second System Log File you want to include in the group.**Format** 4 alphanumeric or special characters (#, \$, @, and -)**Considerations**

- ◆ The file name must be the name of a System Log File that is related to the Environment Description.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

second log file maximum volume block number**Positions** 28–37**Restriction** Valid for BSAM Files only.**Description** *Optional.* Specifies the maximum number of blocks you want used in one volume of the System Log File before SUPRA switches to the next volume of the System Log File.**Format** 1–10 numeric characters**Options** 0–2,147,483,647**Considerations**

- ◆ If the System Log File is a BSAM file, you can enter 0 and let the maximum volume block number equal the total logical records for the file.
- ◆ **OS/390** If the System Log File is a BSAM file and you do not enter a value, ensure that the value of the total logical records is acceptable for use as the maximum volume block number.
- ◆ **VSE** If the System Log File is a BSAM file, enter the total number of blocks to be allocated for the file minus the number of system log buffers. In the System Log File definition, set total logical records, total tracks, and blocks per track to zero.
- ◆ If the System Log File is a BDAM file or ESDS, specify this value when you define the total logical records for this file.
- ◆ If you change this field, Directory Maintenance will automatically mark the schema inconsistent.

third log file

Positions 39–42

Description *Optional.* Specifies the name of the third System Log File you want to include in the group.

Format 4 alphanumeric or special characters (#, \$, @, and -)

Considerations

- ◆ The file name must be the name of a System Log File that is related to the Environment Description.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

third log file maximum volume block number

Positions 44–53

Restriction Valid for BSAM Files only.

Description *Optional.* Specifies the maximum number of blocks you want used in one volume of the System Log File before SUPRA switches to the next volume of the System Log File.

Format 1–10 numeric characters

Options 0–2,147,483,647

Considerations

- ◆ If the System Log File is a BSAM file, you can enter 0 and let the maximum volume block number equal the total logical records for the file.
- ◆ **OS/390** If the System Log File is a BSAM file and you do not enter a value, ensure that the value of the total logical records is acceptable for use as the maximum volume block number.
- ◆ **VSE** If the System Log File is a BSAM file, enter the total number of blocks to be allocated for the file minus the number of system log buffers. In the System Log File definition, set total logical records, total tracks, and blocks per track to zero.
- ◆ If the System Log File is a BDAM file or ESDS, specify this value when you define the total logical records for this file.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

fourth log file**Positions** 55–58**Description** *Optional.* Specifies the name of the fourth System Log File you want to include in the group.**Format** 4 alphanumeric or special characters (@, \$, #, and -)**Considerations**

- ◆ The file name must be the name of a System Log File that is related to the Environment Description.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

fourth log file maximum volume block number**Positions** 60–69**Restriction** Valid for BSAM Files only.**Description** *Optional.* Specifies the maximum number of blocks you want used in one volume of the System Log File before SUPRA switches to the next volume of the System Log File.**Format** 1–10 numeric characters**Options** 0–2,147,483,647**Considerations**

- ◆ If the System Log File is a BSAM file, you can enter 0 and let the maximum volume block number equal the total logical records for the file.
- ◆ **OS/390** If the System Log File is a BSAM file and you do not enter a value, ensure that the value of the total logical records is acceptable for use as the maximum volume block number.
- ◆ **VSE** If the System Log File is a BSAM file, enter the total number of blocks to be allocated for the file minus the number of system log buffers. In the System Log File definition, set total logical records, total tracks, and blocks per track to zero.
- ◆ If the System Log File is a BDAM file or ESDS, specify this value when you define the total logical records for this file.
- ◆ If you change this field, Directory Maintenance will automatically mark the Schema inconsistent.

DELETE: Log Group

Use the following input statement to delete a Log Group.

Input statement 1

DE	
Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

LG	
Positions	4–5
Description	<i>Required.</i> Specifies the Log Group category.

<i>log group</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the Log Group you want to delete.
Format	8 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Log Group name entered during this run.

Physical Field

The Physical Field category contains information about the physical characteristics of a database element, including storage and format information. The Physical Field category supports the following commands (section references appear in parentheses):

- ◆ ADD (“[ADD: Physical Field](#)” on page 349)
- ◆ RELATIONSHIP CHANGE (“[RELATE/REMOVE: Physical Field](#)” on page 379)
- ◆ CHANGE (“[CHANGE: Physical Field](#)” on page 364)
- ◆ RELATIONSHIP DISPLAY (“[RELATE/REMOVE: Physical Field](#)” on page 379)
- ◆ DELETE (“[DELETE: Physical Field](#)” on page 377)
- ◆ REMOVE (“[RELATE/REMOVE: Physical Field](#)” on page 379)
- ◆ DISPLAY (“[DISPLAY](#)” on page 492)
- ◆ RENAME (“[RENAME](#)” on page 504)
- ◆ LONG EDIT (“[LONG EDIT](#)” on page 495)
- ◆ SHORT EDIT (“[SHORT EDIT](#)” on page 507)
- ◆ LONG TEXT (“[LONG TEXT](#)” on page 502)
- ◆ SHORT TEXT (“[SHORT TEXT](#)” on page 510)
- ◆ RELATE (“[RELATE/REMOVE: Physical Field](#)” on page 379)
- ◆ STRUCTURE DISPLAY (“[STRUCTURE DISPLAY: Physical Field](#)” on page 385)

General considerations

- ◆ The sum of the lengths of child Physical Fields must always equal the length of the parent Physical Field to which they belong.

Note that the total number of child Physical fields impact the SUPRA utilities as follows:

- V2LOADR—If the total physical fields (elements) total more than 100 and the 100 plus physical fields (elements) or ALL. are specified, a U1000 abend results.
- V1LOADR—If the total physical fields (elements) total more than 500 and the 500 plus physical fields (elements) or ALL. are specified, the results are unpredictable.

To avoid this situation, have one or more parent physical fields defined that encompass the whole record that can be used for the LOADR utilities.

- ◆ The overlay Physical Field is the last nonlink Physical Field in the BASE. Internal Record.

Naming data transactions

Enter these statements only if you have not entered the naming data during this run.

```
0000000001111111112222222222333333333344444444445555555555666666666677777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
FI file
IR internal record
```

Input statement 1

SC

Positions	4–5
Description	Required. Specifies the schema category.

schema

Positions	7–14
Description	<i>Required.</i> Identifies an existing schema qualifying this Physical Field.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

Input statement 2

FI

- Positions** 4–5
- Description** *Required.* Specifies the file category.
-

file

- Positions** 7–10
- Description** *Required.* Identifies an existing file qualifying the Physical Field.
- Format** 4 alphanumeric or special characters (#, \$, @, and -)
- Consideration** You do not need to enter this name if it is the same as the preceding file name entered during this run.

Input statement 3

IR

- Positions** 4–5
- Description** *Required.* Specifies the Internal Record category.
-

internal record

- Positions** 7–11
- Description** *Required.* Identifies an existing Internal Record qualifying the Physical Field.
- Format** 2 alphanumeric or printable special characters, or BASE.
- Consideration** You do not need to enter this name if it is the same as the preceding Internal Record name entered during this run.

ADD: Physical Field

Use the following input statements to add a Physical Field entity.

Input statement 1

AD

Positions 1–2

Description *Required.* Specifies the ADD command.

PF

Positions 4–5

Description *Required.* Specifies the Physical Field category.

physical field**Positions** 7–36**Description** *Required.* Identifies the Physical Field being added.**Format** 8 alphanumeric or special characters (#, \$, @, -, and *)**Considerations**

- ◆ You do not need to enter this name if it is the same as the preceding Physical Field name entered during this run.
- ◆ The first character must be alphabetic, #, \$, @, or *. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, @, and -.
- ◆ An asterisk (*) in the first position indicates a filler field.
- ◆ If you use @ as the null character, do not use @ as the first character of the Physical Field name.
- ◆ For the ROOT, CTRL, and CODE Physical Fields, the first four characters must be the same as the file name.
- ◆ Linkpath Physical Field names must be in the format ppppLKxx where:
 - pppp is the name of the primary file
 - xx is a unique 2-digit number.
- ◆ Within a BASE. Internal Record, each Physical Field name must be unique. Within a redefined Internal Record, each Physical Field name must be unique and must not be a name used in the BASE. Internal Record.
- ◆ For DL/1 users, the Physical Field name should be the same as the FIELD or XDFLD names defined in the IMS DBD control block. If the FIELD name as defined in the IMS DBD is less than 8 characters, it must be padded to 8 characters using the '@' sign.
- ◆ To establish a relationship for a Primary Secondary Key, reference only Primary File Physical Field mmmmCTRL, or atomic sub-definition Physical Fields that completely map mmmmCTRL. Do not reference non-mmmmCTRL Physical Fields.

Input statement 2

parent

Positions	7–14
Description	<i>Optional.</i> Indicates the Physical Field's parentage in the Internal Record structure.
Default	TOP.
Format	4–8 alphanumeric or special characters (#, \$, @, -, *)
Options	TOP. Indicates this Physical Field is not a child of another Physical Field
	<i>name</i> Identifies the name of the parent Physical Field

Considerations

- ◆ If this is a ROOT, CTRL, CODE, or LKxx Physical Field, this value must be TOP.
- ◆ A maximum of 32 levels of Physical Fields is allowed.

position

Positions	16–23	
Description	<i>Optional.</i> Indicates the location of this Physical Field relative to the location of the other Physical Fields at the level specified by the Parent field.	
Default	END.	
Format	4–8 alphanumeric or special characters (#, \$, @, -, *)	
Options	BEG.	First subelement within the parent structure
	END.	Last subelement within the parent structure
	<i>name</i>	Name of a Physical Field after which this Physical Field is positioned

Considerations

- ◆ If this is a ROOT Physical Field in a primary file, BEG. must be the value.
- ◆ The description of the position and length on the Directory must accurately reflect the position and length of the Physical Field in the PDM File. If you must change the position, you can delete the Physical Field and add it again.

function

Positions	25–54	
Description	<i>Required.</i> Specifies the function of this Physical Field for use by RDM programs.	
Options	AREA	TEMPERATURE
	DATE	TEMP
	DISTANCE	TIME
	MONEY	VELOCITY
	NUMBER	VOLUME
	PRESSURE	WEIGHT
	STRING	

Input statement 3

unit

Positions	7–36
Description	<i>Optional.</i> Specifies the unit of the Function field.
Format	1–30 alphanumeric characters
Options	See “Unit field values” on page 549.
Considerations	

- ◆ If the value of the Function field is STRING or NUMBER, this field must be blank. Otherwise, the value must be valid for the specified function.
- ◆ If you enter a value, you must also enter a value for the Function field.

data format

Position	38
Description	<i>Optional.</i> Indicates the Physical Field's data format for use by RDM programs.
Default	C
Options	B Binary C Character F Floating point K Kanji P Packed decimal Z Zoned decimal

Consideration Directory Maintenance treats Kanji data as a special form of character string. The value of the Field Length field must be a multiple of 2.

field length

- Positions

40–44
- Description

Required. Indicates the length of the Physical Field for use by RDM programs.
- Format

1–5 numeric characters

Considerations

- ◆ This value depends on the data format specified, and whether or not a MANTIS program uses this field. Valid values are:

Data format	Directory limits	MANTIS limits
B	1, 2, 4, or 8	2 or 4
C	1–32,767	1–254
F	4, 8, or 16	4 or 8
K	2–32,766	2–254
P	1–16	1–8
Z	1–18	1–18
If using RDM:	1–15	1–15

- ◆ The description of the position and length on the Directory must accurately reflect the position and length of the Physical Field in the PDM File.

number of decimal places

Positions	46–47
Restriction	Meaningful only if the Data Format field is B, P, or Z.
Description	<i>Optional.</i> Indicates the number of decimal places in a numeric field for use by RDM programs.
Format	1–2 numeric characters

Considerations

- ◆ This value must be valid within the length of the field.
- ◆ If the Data Format field is C, F, or K, Directory Maintenance sets this field to 0.

signed option

Position	49
Description	<i>Required.</i> Indicates whether the numeric data is signed for use by RDM programs and SQL applications.
Options	Y Yes N No

Considerations

- ◆ If the Data Format field is C or K, Directory Maintenance sets this field to N. If the Data Format field is F, Directory Maintenance sets this field to Y.
- ◆ For signed fields, the sign nibble must be C for positive, D for negative. For unsigned fields the sign nibble must be F. PDM does not enforce this, but incorrect results will be produced by RDM and SQL applications using data that does not follow the rule.
- ◆ RDM or SQL will use a sign nibble of F for unsigned data, and C or D for signed data.

retrieval validation option

Position	51
Description	<i>Required.</i> Indicates whether the RDM is to validate data when a GET command is issued.
Options	Y Yes N No
Considerations	<ul style="list-style-type: none">◆ If you enter Y, you must enter a value in the Validation Option field.◆ If you enter N and you enter E, R, or T in the Validation Option field, the RDM will return all data, including data that does not meet the validation requirements defined in a validation exit, range, or table.

key referback

Positions	53–60
Description	<i>Conditional. Required</i> for a linkpath Physical Field in a PDM related file. Identifies the name of the Physical Field in the related file containing the primary file control key.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)
Consideration	The key referback Physical Field must be in the same redefined record as the linkpath Physical Field or in the BASE. Internal Record.

linkpath type

Position	62
Description	<i>Conditional. Required</i> for PDM related file linkpaths. Specifies the linkpath as primary or secondary.
Options	P Primary S Secondary

Input statement 4

sequence field **Positions** 7–14 Not applicable to this release.

sequence field type

Position	16
Description	<i>Conditional.</i> Required for DL/I. Indicates the type of sequence field for DL/I segments.
Options	A Ascending; not valid for DL/I D Descending; not valid for DL/I M Sequenced nonunique field U Sequenced unique field b Unsequenced field

default value

Positions	18–49
Description	<i>Optional.</i> Specifies the default value you want to use for the Physical Field in a RDM program.
Format	1–32 alphanumeric characters

Considerations

- ◆ Specify this value in the data format and length defined for this Physical Field. If the data type is Binary, Packed Decimal, or Zoned Decimal, it must also conform to the number of decimal places.
- ◆ If the data format is Binary, Packed Decimal, or Zoned Decimal, do not use embedded blanks.
- ◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

validation option

Position	51
Description	<i>Optional.</i> Indicates whether the validation option used in a RDM program will call an exit, use a specified range, or use table values.
Options	E Exit R Range T Table b No validation

Considerations

- ◆ Directory Maintenance does not support this option for Kanji data. When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.
- ◆ If you set the Retrieval Validation Option to Y, you must enter a value.

Input statement 5

validation minimum

Positions 7–38

Description *Conditional. Required* when the Validation Option field is R. Specifies the minimum value used to validate the data represented by this entity.

Format 1–32 alphanumeric characters

Considerations

- ◆ If you enter a value, you must also enter a value in the Validation Maximum field.
- ◆ Specify this value in the data format and length defined for the Physical Field. If the data type is Binary, Packed Decimal, or Zoned Decimal, it must also conform to the number of decimal places.
- ◆ If the data format is Binary, Packed Decimal, Zoned Decimal, or Floating Point, do not use embedded blanks.
- ◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

validation maximum

Positions	40–71
Description	<i>Conditional. Required</i> when the Validation Option field is R. Specifies the maximum value used to validate the data represented by this entity.
Format	1–32 alphanumeric characters

Considerations

- ◆ If you enter a value, you must also enter a value for the Validation Minimum field.
- ◆ Specify this value in the data format and length defined for the Physical Field. If the data type is Binary, Packed Decimal, or Zoned Decimal, it must also conform to the number of decimal places.
- ◆ If the data format is Binary, Packed Decimal, Zoned Decimal, or Floating Point, do not use embedded blanks.
- ◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

Input statement 6

validation table

Positions	7–36
Description	<i>Conditional. Required</i> when the Validation Option field is T. Identifies the name of the table used to validate the data represented by this entity.
Format	1–30 alphanumeric characters

Considerations

- ◆ If you enter a name, the table must be defined on the Directory.
- ◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

validation exit

Positions	38–45
Description	<i>Conditional. Required</i> when the Validation Option field is E. Specifies the name of the exit called for data validation.
Format	1–8 alphanumeric characters

Considerations

- ◆ Use standard, operating-system-naming conventions.
- ◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

Input statement 7

nulls allowed option

Position	7
Description	Required. Indicates whether this Physical Field can contain a null value in an RDM program.
Options	Y Yes
	N No

null value

Positions	9–40
Description	Optional. Specifies the null value you want to use for this Physical Field in an RDM program.
Default	See the second item under Considerations.
Format	1–32 alphanumeric characters

Considerations

- ◆ If you enter a value, you must enter Y in the Nulls Allowed Option field.
- ◆ If the Nulls Allowed Option field is Y and you do not enter a value, Directory Maintenance sets a default null value based on the data format of the Domain or Physical Field:

Data format	Default null value
Character	Blanks
Binary	Negative zero according to Length (example: 2 = X'8000')
Packed Decimal	Blanks
Zoned Decimal	Blanks
Floating Point	X'FF' in each byte
Kanji	Blanks

- ◆ Hexadecimal data is allowed regardless of format. To specify hexadecimal data, use the format X'aa...aa' where X'...' is the hexadecimal indicator and 'aa...aaa' must be an even number of characters (0–9 and A–F only). The number of characters divided by 2 must not exceed the length of the Domain or Physical Field.
- ◆ Data not specified as hexadecimal must conform to the data format and length of the Domain and Physical Field.
- ◆ Do not use embedded blanks.
- ◆ If data type is Binary, Packed Decimal, or Zoned Decimal, and you specify the decimal point in the data value, you may use only one decimal point. The number of digits following the decimal point must be less than or equal to the number of decimal places parameter.
- ◆ The Directory stores this value left justified as a character string. Any remaining positions in the field are filled with blanks.
- ◆ If you enter a null value for a numeric field (Binary, Packed Decimal, or Zoned Decimal) and the value is shorter than the specified Length, RDM fills the null field with binary zeros to the left of the value. The sign will be set according to the specified Signed option.

DL/I DBD field indicator

Position 42

Description *Optional.* Indicates if the physical field being defined is also defined as a physical field in the DL/I Database Definition (DBD).

Options Y Yes

N No

Consideration This field is valid for DL/I files only.

CHANGE: Physical Field

Use the following input statements to change a Physical Field entity.

General consideration

If you change the following fields in the Physical Field category, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent:

- ◆ DATA FORMAT
- ◆ NULL VALUE
- ◆ FIELD LENGTH
- ◆ NULLS ALLOWED OPTION
- ◆ KEY REFERBACK
- ◆ NUMBER DECIMAL PLACES
- ◆ LINKPATH TYPE
- ◆ SIGNED OPTION



If the physical field is part of a Secondary Key structure, and if the SK MAINTENANCE ALLOWED field is set to N, the physical field cannot be changed.

Input statement 1

CG

Positions	1–2
Description	<i>Required.</i> Specifies the CHANGE command.

PF

Positions	4–5
Description	<i>Required.</i> Specifies the Physical Field category.

physical field

Positions	7–36
Description	<i>Required.</i> Identifies the Physical Field being changed.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)

Consideration

- ◆ You do not need to enter this name if it is the same as the preceding Physical Field name entered during this run.
- ◆ To establish a relationship for a Primary Secondary Key, reference only Primary File Physical Field mmmmCTRL, or atomic sub-definition Physical Fields that completely map mmmmCTRL. Do not reference non-mmmmCTRL Physical Fields.

Input statement 2

function

Positions	7–36	
Description	<i>Optional.</i> Specifies the function of this Physical Field for use by RDM programs.	
Options	AREA	TEMPERATURE
	DATA	TEMP
	DISTANCE	TIME
	MONEY	VELOCITY
	NUMBER	VOLUME
	PRESSURE	WEIGHT
	STRING	

unit

Positions	38–67
Description	<i>Optional.</i> Specifies the unit of the Function field.
Options	See “Unit field values” on page 549.
Considerations	<div><div>◆</div><div>If the value of the Function field is STRING or NUMBER, this field must be blank. Otherwise, the value must be valid for the specified function.</div></div> <div><div>◆</div><div>If you enter a value, you must also enter a value for the Function field.</div></div>

Input statement 3

data format

Position	7
Description	<i>Optional.</i> Indicates the Physical Field's data format for use by RDM programs.
Options	B Binary C Character F Floating point K Kanji P Packed decimal Z Zoned decimal

Considerations

- ◆ Directory Maintenance treats Kanji data as a special form of character string. The value of *field length* must be a multiple of 2.
- ◆ If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.

field length

- Positions

9–13
- Description

Optional. Indicates the length of the Physical Field for use by RDM programs.
- Format

1–5 numeric characters

Considerations

- ◆ This value depends on the data format. Valid values are:

Data format	Valid lengths
B	1, 2, 4, or 8
C	1–32,767
F	4, 8, or 16
K	A multiple of 2
P	1–16
Z	1–18
If using RDM:	1–15

- ◆ If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.

number of decimal places

- Positions

15–16
- Description

Conditional. Required when the Data Format field is B, P, or Z. Indicates the number of decimal places in a numeric field for use by RDM programs.
- Format

1–2 numeric characters

Considerations

- ◆ This value must be valid within the length of the field.
- ◆ If the Data Format field is K, Directory Maintenance sets this field to 0.
- ◆ If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.

signed option

Position 18

Description *Required.* Indicates whether the numeric data is signed for use by RDM programs and SQL applications.

Options Y Yes

N No

Considerations

- ◆ If the Data Format field is C or K, Directory Maintenance sets this field to N. If the Data Format field is F, Directory Maintenance sets this field to Y.
- ◆ If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.
- ◆ For signed fields, the sign nibble must be C for positive, D for negative. For unsigned fields, the sign nibble must be F. PDM does not enforce this, but incorrect results will be produced by RDM and SQL applications using data that does not follow this rule.
- ◆ RDM or SQL will use a sign nibble of F for unsigned data, and C or D for signed data.

retrieval validation option

Position	20
Description	<i>Optional.</i> Indicates whether the RDM is to validate data when a GET command is issued.
Options	Y Yes N No

Considerations

- ◆ If you enter Y, you must enter a value in the Validation Option field.
- ◆ If you enter N and you enter E, R, or T in the Validation Option field, the RDM will return all data, including data that does not meet the validation requirements defined in a validation exit, range, or table.

key referback

Positions	22–29
Description	<i>Conditional. Required</i> only for a linkpath Physical Field in a PDM related file; optional for all others. Identifies the name of the Physical Field in the related file that contains the primary file control key.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)

Considerations

- ◆ The key referback Physical Field must be in the same redefined Internal Record as the linkpath Physical Field or in the BASE. Internal Record.
- ◆ If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.

linkpath type

Position	31
Restriction	Used for a PDM related file linkpath only.
Description	<i>Optional.</i> Specifies the linkpath as primary or secondary for the Loader/Unloader utility.
Options	P Primary S Secondary
Consideration	If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.

sequence field	Positions	33–40	Not applicable to this release.
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sequence field type

Position	42
Description	<i>Conditional. Required</i> for DL/1. Indicates the type of sequence field for DL/1 segments.
Options	M Sequenced nonunique field U Sequenced unique field b Unsequenced field

Input statement 4

default value

Positions	7–38
Description	<i>Optional.</i> Specifies the default value you want used in an RDM program.
Format	1–32 alphanumeric characters
Considerations	

- ◆ Specify this value in the data format defined for this Physical Field.
- ◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

validation option

Position	40
Description	<i>Optional.</i> Indicates whether the validation option used in an RDM program will call an exit, use a specified range, or use table values.
Options	E Exit R Range T Table b No validation

Considerations	
	◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.
	◆ If you set the Retrieval Validation Option to Y, you must enter a value in this field.

Input statement 5

validation minimum**Positions** 7–38**Description** *Conditional. Required* when the Validation Option field is R. Specifies the minimum value used to validate the data represented by this entity.**Format** 1–32 alphanumeric characters**Considerations**

- ◆ If you enter a value, you must also enter a value in the Validation Maximum field.
- ◆ Specify this value in the data format defined for this Physical Field.
- ◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

validation maximum**Positions** 40–71**Description** *Conditional. Required* when the Validation Option field is R. Specifies the maximum value used to validate the data represented by this entity.**Format** 1–32 alphanumeric characters**Considerations**

- ◆ If you enter a value, you must also enter a value in the Validation Minimum field.
- ◆ Specify this value in the data format defined for this Physical Field.
- ◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

Input statement 6

validation table

Positions	7–36
Description	<i>Conditional. Required</i> when the Validation Option field is T. Identifies the name of the table used to validate the data represented by this entity.
Format	1–30 alphanumeric characters
Considerations	<ul style="list-style-type: none">◆ If you enter a name in this field, the table must be defined on the Directory.◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

validation exit

Positions	38–45
Description	<i>Conditional. Required</i> when the Validation Option field is E. Specifies the name of the exit called by a RDM program for data validation.
Format	1–8 alphanumeric characters
Considerations	<ul style="list-style-type: none">◆ Use standard, operating-system-naming conventions.◆ When the data format of the Physical Field is Kanji, Directory Maintenance ignores this field.

DL/I DBD field indicator

Position	47
Description	<i>Optional.</i> Indicates if the physical field being defined is also defined as a physical field in the DL/I Database Definition (DBD).
Options	Y Yes N No
Consideration	This field is valid for DL/I Files only.

Input statement 7

nulls allowed option

Position 7

Description *Required.* Indicates whether this Physical Field can contain a null value in an RDM program.

Options Y Yes

 N No

Consideration If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.

null value

- Positions

9–40
- Description

Optional. Specifies the null value you want to use for this Physical Field in an RDM program.
- Format

1–32 alphanumeric characters

Considerations

- ◆ If you enter a value, you must enter Y in the Nulls Allowed Option field.
- ◆ If the Nulls Allowed Option field is Y and you do not enter a value in this field, Directory Maintenance sets a default null value based on the data format of the Domain or Physical Field:

Data format	Default null value
Character	Blanks
Binary	Maximum negative number (X 80000000)
Packed Decimal	Blanks
Zoned Decimal	Blanks
Floating Point	X FF' in each byte
Kanji	Blanks

- ◆ To specify hexadecimal data, use the format X'aa...aa'

where:

X'...'is the hexadecimal indicator

'aa...aaa' must be an even number of characters (0–9 and A–F only)

The number of characters divided by 2 must not exceed the length of the Domain or Physical Field.

- ◆ Data not specified as hexadecimal must conform to the data format and length of the Domain and Physical Field.
- ◆ If you change this field, Directory Maintenance will automatically mark the Internal Record, File, and Schema inconsistent.

DELETE: Physical Field

Use the following input statements to delete a Physical Field. You must change any Access Sets that use the deleted Physical Fields(s).



If the physical field is part of a Secondary Key structure, and if the SK MAINTENANCE ALLOWED field is set to N, the physical field cannot be deleted.

Input statement 1

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

PF

Positions	4–5
Description	<i>Required.</i> Specifies the Physical Field category.

physical field

Positions	7–36
Description	<i>Required.</i> Identifies the Physical Field you want to delete.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Physical Field name entered during this run.
- ◆ You must change any Access Sets that use the deleted Physical Field(s).
- ◆ To establish a relationship for a Primary Secondary Key, reference only Primary File Physical Field mmmmCTRL, or atomic sub-definition Physical Fields that completely map mmmmCTRL. Do not reference non-mmmmCTRL Physical Fields.

Input statement 2

remove lv option

Position	7
Description	<i>Optional.</i> Specifies whether to remove the Physical Field from any related Logical Views.
Default	N
Options	Y Yes N No
Consideration	If the Delete XF Option field is Y, Directory Maintenance sets this field to Y.

delete xf option

Position	9
Description	<i>Optional.</i> Specifies whether to delete any related External Fields.
Default	N
Options	Y Yes N No

RELATE/REMOVE: Physical Field

Use the following input statements to establish and remove relationships between a Physical Field and its associated External Fields and Key Codes. You may also change or print Key Code relationships. To list a Physical Field's relationships, use the STRUCTURE DISPLAY command described in "[STRUCTURE DISPLAY: Physical Field](#)" on page 385.

This section includes the Physical Field/External Fields and Physical Field/Key Codes relationships. The input statements are described separately for each subcategory.

Physical Field/External Fields relationship

Use the following input statements to relate or remove the relationship between a Physical Field and its associated External Fields.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

PF

Positions	4–5
Description	<i>Required.</i> Specifies the Physical Field category.

physical field**Positions** 7–36**Description** *Required.* Identifies the Physical Field being processed.**Format** 8 alphanumeric or special characters (#, \$, @, -, and *)**Considerations**

- ◆ You do not need to enter this name if it is the same as the preceding Physical Field name entered during this run.
- ◆ For the ROOT, CTRL, and CODE Physical Fields, the first four characters must be the same as the file name.
- ◆ Linkpath Physical Fields must be in the format *ppppLKxx*

where:

pppp is the name of the primary file

xx is a unique 2-digit number

Input statement 2

XF

Positions	7–8
Description	<i>Required.</i> Specifies the External Field subcategory for the relationship.

external field

Positions	10–39
Description	<i>Required.</i> Specifies the name of the related External Field or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding External Field name entered during this run.
- ◆ With the RELATE command, ALL. relates any existing External Fields not already related to this Physical Field. If you specify ALL. with the RELATE command, use the STRUCTURE DISPLAY command to verify the External Fields related. Careful consideration should be given when using ALL. with the RELATE command.
- ◆ With the REMOVE command, ALL. deletes all existing relationships between the Physical Field and its associated External Fields.

Physical Field/Key Codes relationship

Use the following input statements to relate or change the relationship between a Physical Field and its associated Key Codes. Use only the first two input statements to remove or print those relationships.



If the Key Code belongs to a Secondary Key for which the SK MAINTENANCE ALLOWED field is set to N, then the Physical Field cannot be related to or removed from the Key Code.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship data RD Display (print) relationship data RL Establish relationship RM Remove relationship

PF

Positions	4–5
Description	<i>Required.</i> Specifies the Physical Field category.

physical field

Positions	7–36
Description	<i>Required.</i> Identifies the Physical Field being processed.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Physical Field name entered during this run.
- ◆ For CTRL and CODE Physical Fields, the first four characters must be the same as the file name.
- ◆ You cannot relate a ROOT or linkpath Physical Field to a Key Code.

Input statement 2

KC

Positions	7–8
Description	<i>Required.</i> Specifies the Key Code subcategory for the relationship.

secondary key

Positions	10–39
Description	<i>Required.</i> Specifies the name of the qualifying Secondary Key for the related Key Code.
Format	8 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Secondary Key name entered during this run.

key code

Positions	41–70
Description	<i>Required.</i> Specifies the name of the related Key Code.
Format	2 alphanumeric characters, any printable special character, or BASE.

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Key Code name entered during this run.
- ◆ A Key Code named BASE. can be related to only Physical Fields in the BASE. Internal Record. However, any other Key Codes can be related to Physical Fields in the BASE. Internal Record and/or in the Internal Record with the same name as the Key Code.

Input statement 3

RELATE and RELATIONSHIP CHANGE commands only

position for relate

Positions	7–36		
Description	<i>Optional.</i> Specifies the position of this Physical Field relative to the location of the other Physical Fields related to the Key Code.		
Default	END.		
Format	8 alphanumeric or special characters (#, \$, @, -, and *)		
Options	BEG.	First subelement	
	END.	Last subelement	
	<i>name</i>	Name of the Physical Field after which this Physical Field should be positioned	

sequence field type

Position	38
Not applicable to this release. Only ascending order is used.	

STRUCTURE DISPLAY: Physical Field

Use the following input statements to list the Physical Field's associated Physical Fields, External Fields, and Key Codes. You must use both input statements to list each structure.

Input statement 1

SD

Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

PF

Positions	4–5
Description	<i>Required.</i> Specifies the Physical Field category.

physical field

Positions	7–36
Description	<i>Required.</i> Specifies the name of the Physical Field.
Format	8 alphanumeric or special characters (#, \$, @, -, and *)
Consideration	You do not need to enter this name if it is the same as the preceding Physical Field name entered during this run.

Input statement 2

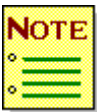
subcategory code

Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	KC Key Code PF Physical Field XF External Field
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

Schema

The Schema category defines the global view of your entire database. The global view includes both the physical (internal) and logical (external) definitions. The Schema category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Schema**” on page 387)
- ◆ RELATE (“**RELATE/REMOVE: Schema**” on page 394)
- ◆ CHANGE (“**ADD/CHANGE: Schema**” on page 387)
- ◆ REMOVE (“**RELATE/REMOVE: Schema**” on page 394)
- ◆ CHECK (“**CHECK: Schema**” on page 388)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ COPY (“**COPY: Schema**” on page 391)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ DELETE (“**DELETE: Schema**” on page 393)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ SPECIAL FUNCTION (“**SPECIAL FUNCTION: Schema**” on page 398)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ STRUCTURE DISPLAY (“**STRUCTURE DISPLAY: Schema**” on page 400)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)



A Schema entity does not require a naming data transaction.

ADD/CHANGE: Schema

Use the following input statements to add or change a schema description.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

SC

Positions	4–5
Description	<i>Required.</i> Specifies the schema category.

schema

Positions	7–36
Description	<i>Required.</i> Identifies the schema being processed
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding schema name entered during this run.
- ◆ The first character must be alphabetic, #, \$, or @. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, and @.
- ◆ If you use @ as the null character, do not use @ as the first character of the schema name.
- ◆ This name cannot be the same as the name of another unqualified entity: a Conceptual Schema, Directory Component Description, Domain, Edit Mask, Reserved Word, Security Group, Table, User, or Conceptual Schema.

Input statement 2

bound name	Positions 7–14	Not applicable to this release.
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CHECK: Schema

Use the following input statements to perform a Consistency Check on a schema.

Input statement 1

CK	
Positions	1–2
Description	Required. Specifies the CHECK command.
SC	
Positions	4–5
Description	Required. Specifies the schema category.
schema	
Positions	7–36
Description	Required. Identifies the schema on which the Consistency Check will be performed.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

Input statement 2

check all physical entities

Position	7
Description	<i>Optional.</i> Specifies whether to perform the Consistency Check on all physical entities in this schema.
Default	N
Options	Y Yes N No

Considerations

- ◆ You must enter Y in this field, the Check Inconsistent Physical Entities field, the Check All Logical Entities field, or the Check Inconsistent Logical Entities field.
- ◆ Physical entities are in the internal schema. These entities must be consistent before the schema is marked consistent and the PDM is able to use the schema.

check inconsistent physical entities

Position	9
Description	<i>Optional.</i> Specifies whether to perform the Consistency Check on only the inconsistent physical entities.
Default	Y
Options	Y Yes N No

Consideration You must enter Y in this field, the Check All Physical Entities field, the Check All Logical Entities field, or the Check Inconsistent Logical Entities field.

check all logical entities

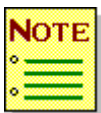
Position	11
Description	<i>Optional.</i> Specifies whether to perform the Consistency Check on all logical entities in this schema.
Default	Y
Options	Y Yes N No
Considerations	<ul style="list-style-type: none">◆ You must enter Y in this field, the Check All Physical Entities field, the Check Inconsistent Physical Entities field, or the Check Inconsistent Logical Entities field.◆ Logical entities are in the external schema. Inconsistent logical entities are flagged but do not affect the consistency of the Schema entity.

check inconsistent logical entities

Position	13
Description	<i>Optional.</i> Specifies whether to perform the Consistency Check on only the inconsistent logical entities.
Default	N
Options	Y Yes N No
Consideration	You must enter Y in this field, the Check All Physical Entities field, the Check Inconsistent Physical Entities field, or the Check All Logical Entities field.

COPY: Schema

Use the following input statements to copy all schema information from one schema (source) to another (target):



When you copy a schema, Directory Maintenance duplicates all entity descriptions within (qualified by) the source schema in the target schema. You may need to copy a schema to produce a test version of a production schema. Also, if conversion from one type of disk storage to another is necessary, you can copy the schema to make the required changes to all files. If the copied schema was consistent, the new schema is also consistent.

Input statement 1

CO

Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

SC

Positions	4–5
Description	<i>Required.</i> Specifies the schema category.

source schema

Positions	7–36
Description	<i>Required.</i> Identifies the schema you want to copy.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

Input statement 2

target schema

Positions	7–36
Restriction	This name must not already exist.
Description	<i>Required.</i> Specifies the name of the new schema.
Format	1–8 alphanumeric or special characters (#, \$, and @)

relate users option

Position	38
Description	<i>Optional.</i> Indicates whether you want to relate all related Users to logical views in the new schema.
Default	Y
Options	Y Yes N No

DELETE: Schema

Use the following input statement to delete an existing schema.

Input statement 1

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

SC

Positions	4–5
Description	<i>Required.</i> Specifies the schema category.

schema

Positions	7–36
Description	<i>Required.</i> Identifies the schema being deleted.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

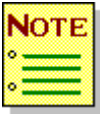
RELATE/REMOVE: Schema

Use the following input statements to establish or remove relationships between a schema and its associated Conceptual Schema and Relations. The input statements are described separately for each subcategory. To list a schema's relationships, use the STRUCTURE DISPLAY command described in "STRUCTURE DISPLAY: Schema" on page 400.

This section includes the Schema/Conceptual Schemas and Schema/Relations relationships. The input statements are described separately for each subcategory.

Schema/Conceptual Schema relationship

Use the following input statements to relate or remove the relationship between a schema and its associated Conceptual Schema.



A schema can be related to only one Conceptual Schema.

Input statement 1

command code	
Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship
SC	
Positions	4–5
Description	<i>Required.</i> Specifies the schema category.
schema	
Positions	7–36
Description	<i>Required.</i> Identifies the schema being processed.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

Input statement 2

CS

Positions	7–8
Description	<i>Required.</i> Specifies the Conceptual Schema subcategory for the relationship.

related conceptual schema

Positions	10–39
Description	<i>Required.</i> Specifies the name of the related Conceptual Schema or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.
- ◆ Multiple schemas can be related to the same Conceptual Schema.
- ◆ ALL. is not valid with the RELATE command. With the REMOVE command, ALL. deletes the existing relationship with the schema.

Schema/Relations relationship

Use the following input statements to relate or remove the relationship between a schema and its associated relations.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

SC

Positions	4–5
Description	<i>Required.</i> Specifies the schema category.

schema

Positions	7–36
Description	<i>Required.</i> Identifies the schema being processed..
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

Input statement 2

RE

Positions	7–8
Description	<i>Required.</i> Specifies the Relation subcategory for the relationship.

related relation

Positions	10–39
Description	Specifies the name of the related Relation or ALL.
Format	1–25 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Relation name entered during this run.
- ◆ With the RELATE command, ALL. relates each existing Relation not already related to this schema.
- ◆ With the REMOVE command, ALL. deletes all existing relationships between the schema and its associated relations.
- ◆ If you specify ALL. with the RELATE command, use the STRUCTURE DISPLAY command to verify the Relation names.

SPECIAL FUNCTION: Schema

Use the following input statements to permit or deny maintenance against an active schema. For more information on how to use active schema maintenance, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

Input statement 1

SF	
Positions	1–2
Description	<i>Required.</i> Specifies the SPECIAL FUNCTION command.

SC	
Positions	4–5
Description	<i>Required.</i> Indicates the schema category.

<i>schema</i>	
Positions	7–14
Description	<i>Required.</i> Specifies the name of the active schema.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

Input statement 2

active schema maintenance option

Position	7
Description	<i>Optional.</i> Indicates whether you can perform maintenance on an active schema.
Options	Y Yes N No

Considerations

- ◆ If you enter Y, you cannot perform Update functions on an inactive schema.
- ◆ When you change the active schema, you must Consistency Check the schema. If you log off with an inconsistent schema, the PDM will not be able to initialize using that schema as the active schema.



Generally, only cold starts could not occur; however, warm starts are affected if you tried to purge a file and reopen it; open would fail if the schema were inconsistent.

- ◆ Each time a user signs on, Directory Maintenance sets the active schema maintenance indicator to N.

STRUCTURE DISPLAY: Schema

Use the following input statements to list the schema’s associated Access Sets, Conceptual Schema, Environment Descriptions, External Fields, Files, Logical Views, and Relations. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	Required. Specifies the STRUCTURE DISPLAY command.

SC	
Positions	4–5
Description	Required. Specifies the schema category.

schema	
Positions	7–36
Description	Required. Specifies the name of the schema.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

Input statement 2

subcategory code	
Positions	7–8
Description	Required. Specifies the subcategory you want to use in the structure display.
Options	AS Access Set LV Logical View CS Conceptual Schema RE Relation ED Environment Description XF External Field FI File
Consideration	The table under “Relationship categories and commands” on page 50 shows the structure displayed for each subcategory.

Secondary Key

The Secondary Key category is used to provide indexed access to a database file. A Secondary Key identifies a Key Code or a combination of Key Codes used as the key for indexing. The Secondary Key category supports the following commands (section references appear in parentheses):

- ◆ ADD (“[ADD/CHANGE: Secondary Key](#)” on page 404)
- ◆ LONG TEXT (“[LONG TEXT](#) ” on page 502)
- ◆ CHANGE (“[ADD/CHANGE: Secondary Key](#)” on page 404)
- ◆ RELATE (“[RELATE/REMOVE: Secondary Key](#)” on page 417)
- ◆ CHECK (“[CHECK: Secondary Key](#)” on page 413)
- ◆ REMOVE (“[RELATE/REMOVE: Secondary Key](#)” on page 417)
- ◆ COPY (“[COPY: Secondary Key](#)” on page 414)
- ◆ RENAME (“[RENAME](#)” on page 504)
- ◆ DELETE (“[DELETE: Secondary Key](#)” on page 416)
- ◆ SHORT EDIT (“[SHORT EDIT](#) ” on page 507)
- ◆ DISPLAY (“[DISPLAY](#) ” on page 492)
- ◆ SHORT TEXT (“[SHORT TEXT](#) ” on page 510)
- ◆ LONG EDIT (“[LONG EDIT](#)” on page 495)
- ◆ STRUCTURE DISPLAY (“[STRUCTURE DISPLAY: Secondary Key](#)” on page 419)

General considerations

Once you have populated the Secondary Key, you cannot perform the following functions:

- ◆ Remove the index File-to-Secondary Key relationship
- ◆ Delete the index file
- ◆ Delete the database file
- ◆ Change, delete, or rename the Internal Record
- ◆ Add or delete the Key Code
- ◆ Relate or remove the Key Code-to-Physical Field relationship
- ◆ Change or delete the Physical Field
- ◆ Change or delete the Secondary Key
- ◆ If the Secondary Key indexes an IMS file, then the name defined for the Secondary Key field must exactly correspond to the XDFLD statement in the primary indexed database (A).

For information on how to add an index file, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

Naming data transactions

Enter these statements only if you have not entered the naming data during this run.

```
000000000111111111222222222333333333444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SC schema
FI file  Secondary Key
```

Input statement 1

SC

Positions	4–5
Description	<i>Required.</i> Specifies the schema category.

schema

Positions	7–36
Description	<i>Required.</i> Identifies an existing schema qualifying the file.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Input statement 2

FI

Positions	4–5
Description	<i>Required.</i> Specifies the file category.

file

Positions	7–36
Description	<i>Required.</i> Identifies an existing database or DL/I File qualifying the Secondary Key.
Format	3–17 alphanumeric or special characters (#, \$, @, and -)

ADD/CHANGE: Secondary Key

Use the following input statements to add or change a Secondary Key for the specified schema and file. All defaults are taken from the default Secondary Key entity.

General consideration

If you change the following fields in the Secondary Key category, Directory Maintenance will automatically mark the Secondary Key, File, and Schema inconsistent:

- ◆ DATA TYPE SORTING
- ◆ FILE RECORD POINTER
- ◆ PRIMARY SECONDARY KEY
- ◆ RECORD POINTER ORDERING
- ◆ UNIQUENESS OPTION

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

SK

Positions	4–5
Description	<i>Required.</i> Specifies the Secondary Key category.

secondary key

Positions 7–36

Description *Required.* Identifies the Secondary Key being processed.

Format For PDM files:

- ◆ 1–4 must be the qualifying primary or related file name
- ◆ 5–6 must be SK
- ◆ 7–8 can be any combination of alphanumeric characters and the special characters #, \$, @, and -.

For DL/I files:

- ◆ 1–8 can be any combination of alphanumeric characters and the special characters #, \$, @, and -.
- ◆ The Secondary Key name must be the same name as specified on the XDFLD statement in the primary DBD. If the name is less than 8 characters, it must be padded with the @ sign.

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Secondary Key name entered during this run.
- ◆ If you use @ as the null character, do not use @ as the first character of the Secondary Key name.
- ◆ Within the file, this name must be unique.

Input statement 2

PDM maintenance density

Positions	7–8
Description	<i>Optional.</i> Specifies the packing density to be used when a block split occurs through normal maintenance of the Secondary Key tree structure by the PDM.
Default	50
Options	1–99
Consideration	This field is ignored for IMS Secondary Keys

damage control action

Positions	11–18
Description	<i>Optional.</i> Specifies the action you want when an error occurs after update to the Secondary Key and the PDM could not maintain the integrity of the Secondary Key.
Options	A or ABEND Abnormally terminate C or CONTINUE Continue processing; however, the index will not be usable R or RESPOND Write a message to the operator console and await response (abend or continue)
Consideration	Ignored for IMS Secondary Keys.

load density

Positions	20–21
Description	<i>Optional.</i> Specifies the packing density to be used during a POPULATE or REORGANIZE of the Secondary Key through the Directory Maintenance file utility commands.
Default	75
Options	1–99
Consideration	The value stored here will be displayed on the file utility screens for POPULATE and REORGANIZE. The load density may be changed temporarily on the file utility screen.

sk maintenance allowed

Position	23
Description	<i>Optional.</i> Indicates whether to allow maintenance on the Secondary Key structure. It is intended to protect against the changing of a Secondary Key while it is being populated or reorganized.
Default	Y
Options	Y Yes N No

Considerations

- ◆ While a Secondary Key is populated, you cannot perform the following functions:
 - Remove the index File-to-Secondary Key relationship
 - Delete the index file
 - Delete the database file
 - Change, delete, or rename the Internal Record
 - Add or delete the Key Code
 - Relate or remove the key Code-to-Physical Field relationship
 - Change or delete the Physical Field or the Secondary Key
- ◆ You cannot change directory definitions involving Secondary Keys unless this field contains Y, and you cannot perform File Utility functions using this Secondary Key unless this field contains N.

eligible to RDM

Position	25
Description	<i>Optional.</i> Indicates to RDM whether to use this Secondary Key as a possible access strategy.
Default	Y
Options	Y Secondary Key is eligible for use if populated. N Secondary Key may not be used.

uniqueness option

Position	27
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Specifies whether this Secondary Key may have one and only one data file record containing a particular Secondary Key value.
Options	Y Uniqueness will be enforced N Uniqueness will not be enforced

Considerations

- ◆ This field is ignored for IMS Secondary Keys.
- ◆ If you change this field, Directory Maintenance will automatically mark the Secondary Key, File, and Schema inconsistent.

file record pointer option

- Positions** 29–36
- Restriction** For SUPRA Server release 2.7 and higher only.
- Description** *Required.* Indicates to the PDM that data file record pointers should be kept in sorted sequence in the index file when the Secondary Key is nonunique.
- Options** I or INDIRECT Pointer will be the Primary Key
D or DIRECT Pointer will be the RRN refer of the data file record

Considerations

- ◆ For Primary Files, when INDIRECT is specified, the control key Secondary Key definition is used.
- ◆ The following table shows the permitted record pointer type(s) for primary and related files by file access method.

File type	Access method	Record pointer type
primary	KSDS	INDIRECT
	ESDS	INDIRECT/DIRECT
	BDAM	INDIRECT/DIRECT
related	ESDS	DIRECT
	BDAM	DIRECT

- ◆ INDIRECT is only permitted for a Secondary Key on a primary file. If the record pointer type is INDIRECT, and the control key of the primary file is subdefined, the atomic elements of the subdefinition must form a complete map (with no FILLER or implied space) of the entire control key.
- ◆ If any Secondary Key on a data file has data type sorting=Y and file record pointer option=INDIRECT, then one Secondary Key on that data file must be marked as the primary Secondary Key.
- ◆ This field is ignored for IMS Secondary Keys.
- ◆ If you change this field, Directory Maintenance will automatically mark the Secondary Key, File, and Schema inconsistent.

record pointer ordering option

Positions	38–43	
Restriction	For SUPRA Server release 2.7 and higher only.	
Description	<i>Required.</i> Indicates to the PDM what ordering method should be used for data file record pointers in the index file when the Secondary Key is nonunique.	
Options	SORTED	Record pointers will be maintained in sorted sequence, either by data type or treated strictly as CHAR data
	FIFO	Record pointers will be maintained in time-ordered sequence as inserted

Considerations

- ◆ This field is ignored for IMS Secondary Keys.
- ◆ If you change this field, Directory Maintenance will automatically mark the Secondary Key, File, and Schema inconsistent.

data type sorting option

Position 45

Restriction For SUPRA Server release 2.7 and higher only.

Description *Required.* Indicates to the PDM whether the data types of individual physical fields influence the sequencing of Secondary Key values and indirect data file record pointers in the index file.

Options Y Data types will be used

N All data will be considered as CHAR data

Considerations

- ◆ This field is ignored for IMS Secondary Keys.
- ◆ If any Secondary Key on a data file has data type sorting=Y and file record pointer option=INDIRECT, then one Secondary Key on that data file must be marked as the primary Secondary Key.
- ◆ If you change this field, Directory Maintenance will automatically mark the Secondary Key, File, and Schema inconsistent.

primary secondary key indicator

Position	47
Restriction	For SUPRA Server release 2.7 and higher only.
Description	<i>Required.</i> Indicates to the PDM whether to treat this Secondary Key as the primary Secondary Key.
Options	Y Treat this Secondary Key as a primary Secondary Key N Do not treat this Secondary key as a primary Secondary Key

Considerations

- ◆ This field is ignored for IMS Secondary Keys.
- ◆ If any Secondary Key on a data file has data type sorting=Y and file record pointer option=INDIRECT, then one Secondary Key on that data file must be marked as the primary Secondary Key.
- ◆ If you change this field, Directory Maintenance will automatically mark the Secondary Key, File, and Schema inconsistent.
- ◆ If you are defining a Primary Secondary Key, then the relations established for the Key Code to Physical Field, or Physical Field to Key Code, must reference only the mmmmCTRL Physical Field of the Primary file, or the atomic elements that completely subdefine mmmmCTRL.

CHECK: Secondary Key

Use the following input statement to perform a Consistency Check on a Secondary Key.

Input statement 1

CK

Positions	1–2
Description	<i>Required.</i> Specifies the CHECK command.

SK

Positions	4–5
Description	<i>Required.</i> Specifies the Secondary Key category.

secondary key

Positions	7–36
Description	<i>Required.</i> Identifies the Secondary Key on which the Consistency Check will be performed.
Format	8 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Secondary Key name entered during this run.

COPY: Secondary Key

Use the following input statements to copy an existing Secondary Key from one schema (source) to another (target).

Input statement 1

CO

Positions 1–2

Description *Required.* Specifies the COPY command.

SK

Positions 4–5

Description *Required.* Specifies the Secondary Key category.

source secondary key

Positions 7–36

Description *Required.* Identifies the Secondary Key you want to copy.

Format 8 alphanumeric or special characters (#, \$, @, and -)

Consideration You do not need to enter this name if it is the same as the preceding Secondary Key name entered during this run.

Input statement 2

target schema

Positions 7–36

Description *Required.* Identifies the schema to which you want to copy the Secondary Key.

Format 1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding target schema name entered during this run.
- ◆ The file to which you copy the Secondary Key must be physically identical to the source file, including the file name.
- ◆ Directory Maintenance also copies existing relationships from the source schema into the target schema.
- ◆ The source schema cannot be the same as the target schema.

DELETE: Secondary Key

Use the following input statement to delete a Secondary Key entity.



If the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, the Secondary Key cannot be deleted.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

SK

Positions	4–5
Description	<i>Required.</i> Specifies the Secondary Key category.

secondary key

Positions	7–36
Description	<i>Required.</i> Identifies the Secondary Key being deleted.
Format	8 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Secondary Key name entered during this run.

RELATE/REMOVE: Secondary Key

Use the following input statements to establish or remove a relationship between a Secondary Key and its associated index file. To list a Secondary Key's relationships, use the STRUCTURE DISPLAY command described in "[STRUCTURE DISPLAY: Secondary Key](#)" on page 419.



If the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, the Secondary Key cannot be related to or removed from an index file.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

SK

Positions	4–5
Description	<i>Required.</i> Specifies the Secondary Key category.

secondary key

Positions	7–36
Description	<i>Required.</i> Identifies the Secondary Key being processed.
Format	8 alphanumeric or special characters (#, \$, @, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Secondary Key name entered during this run.
- ◆ The PDM uses the index File-to-Secondary Key relationship to determine where to build the index structure for this Secondary Key when the file utilities POPULATE command is executed.
- ◆ Use the following formula to calculate the maximum number of Secondary Keys in an index file:

$$(\text{blocksize}/128) - 1$$

Input statement 2

FI

Positions	7–8
Description	<i>Required.</i> Specifies the file subcategory for the relationship.

index file

Positions	10–39
Description	<i>Required.</i> Specifies the name of the related index file.
Format	4 alphanumeric or special characters (#, \$, @, and -)
Consideration	Use the following formula to calculate the maximum number of Secondary Keys in an index file: $(\text{blocksize}/128) - 1$

STRUCTURE DISPLAY: Secondary Key

Use the following input statements to list the Secondary Key's associated index files, Key Codes, Physical Fields, and External Fields:



You must use both input statements to list each structure.

Input statement 1

SD

Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

SK

Positions	4–5
Description	<i>Required.</i> Specifies the Secondary Key category.

secondary key

Positions	7–36
Description	<i>Required.</i> Identifies the Secondary Key being processed.
Format	8 alphanumeric or special characters (#, \$, @, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Secondary Key name entered during this run.

Input statement 2

subcategory code

Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	FI Index File KC Key Code PF Physical Field XF External Field

Consideration The table under “[Relationship categories and commands](#)” on page 50 shows the structure displayed for each subcategory.

6

Maintaining System data

This chapter presents the Directory Maintenance input statements used to maintain the System data. These input statements are presented in alphabetical order by category and command within each category. Headers are included to help you quickly find the category and command you want to process.

The System data categories are:

- ◆ Directory Component Description
- ◆ Edit Mask
- ◆ Reserved Word
- ◆ Tables

Coding command statements

Code command statements as follows:

```
0000000001111111112222222223333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
cm ct xxxxxx                                     yyyyyyyy
```

where:

cm is the command code

ct is the category code

xxxxxx is an entity name or value

yyyyyyyy is the optional sequence number

After you become familiar with the format of the command statements, use “[Command statement layouts](#)” on page 513 for quick reference of their general layout. That section graphically presents the Command statements and all of the fields you enter.

The considerations that follow apply to all input statements. You should be familiar with them before you begin entering data.

Naming data considerations

Naming data transactions specify the required qualifiers for the command statements within each category (see “[Audit listing](#)” on page 34). A naming data transaction contains only the category code in positions 4 and 5, and the name of the qualifying entity beginning in position 7. The qualifier name you enter, such as a Schema or File name, becomes a sticky field and is carried over through all subsequent statements until changed. The qualifiers required as naming data are shown before the command statements for each category.

Command statement considerations

The first input statement for every command is in this standard format:

- ◆ positions 1–2 = command code
- ◆ positions 4–5 = category code
- ◆ positions 7–36= entity name

Naming conventions for an entity are shown with the ADD command for each category. For example, the first character must be alphabetic, #, \$, or -. Any other references to an entity name contain the description and format but not the conventions. The table under “[Naming data transactions](#)” on page 29 summarizes all naming conventions.

Once you enter the name of an entity, that name becomes a sticky field and is carried over through all subsequent statements until changed. Sticky fields are identified in the considerations for each applicable name by a statement similar to this: You do not need to enter this name if it is the same as the preceding Edit Mask name entered during this run. However, you can always name an entity again, even if it is already the value of a sticky field.

A value shown in uppercase letters on the position line for any transaction description is a literal value and must be coded exactly as shown. For example, the category code for an Edit Mask appears as: *Positions 4–5 EM*. You must code EM in those positions. If the value of a field is not a literal, the field name appears in lowercase letters.

The field positions for most ADD and CHANGE commands are identical. When a field is blank for an ADD command and a default value is available, Directory Maintenance uses the default value. When a field is blank for a CHANGE command, the field retains any existing value.

You can use default values for many fields. Many default values are set during installation using special default entities. You can use Directory Maintenance to change these default values. “[Supplied default values](#)” on page 557 lists the initial values of these default entities. Other default values are derived from Directory Maintenance software. These default values are listed in this manual and cannot be changed.

A field that previously contained a value is automatically blanked if you place the special null character as the first nonblank character within the field (see “Eject option” on page 79). The default null character is @. For example, assume the Default Value field in positions 7–38 for a Physical Field 4 contained a value. Entering the null character within that field would delete that value:

```
000111111111122222222233333333
78901234567890123456789012345678
@
```

Entity name fields contain 30 positions and must not contain embedded blanks. If an entity name does not contain 30 characters, you can code the name in any position within the field. Similarly, you do not have to right or left justify data values as long as you position the value within the specified field. For example, the length of an External Field is coded in positions 7–11. If the length is 9, you can code 9 in any position in the field, as shown below:

```
00011
78901
9
```

In the format descriptions, fields are marked as follows::

- ◆ *Required.* Fields must contain a value; you can enter a value or accept a default value. Required fields cannot contain the null character. If you use the null character in a required field, an error results.
- ◆ *Optional.* Fields can be blank.
- ◆ *Conditional.* Fields may be *Required* or *Optional* depending on the value you enter in another field.

Directory Component Description

The Directory Component Description category provides execution options for Directory Maintenance. The Directory Component Description category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Directory Component Description**” on page 426)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)
- ◆ CHANGE (“**ADD/CHANGE: Directory Component Description**” on page 426)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)

The Directory Component Description entity does not require a naming data transaction.

ADD/CHANGE: Directory Component Description

Use the following input statements to add or change the Directory Component Description entity (changes do not take effect until the next time you sign on to Directory Maintenance).



CD#CSXM0000 is the only name usable by Directory Maintenance for this release. You need not add any additional Directory Component Descriptions.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

DC

Positions	4–5
Description	<i>Required.</i> Specifies the Directory Component Description category.

directory component description

Positions	7–36
Description	<i>Optional.</i> The Directory Component Description name supplied on the release tape is CD#CSXM0000. You must use this name for this release.
Default	CD#CSXM0000
Consideration	CD#CSXM0000 is the only name usable by Directory Maintenance. You need not define any additional Directory Component Descriptions for this release.

Input statement 2

<i>station priority</i>	Positions	7–9	Not applicable to this release.
--------------------------------	------------------	------------	---------------------------------

console option

Position	11
Description	<i>Optional.</i> Indicates whether to route messages to the system console.
Default	N
Options	Y Yes N No

security console option

Position	13
Description	<i>Optional.</i> Indicates whether to enable the console message for logon failures.
Default	Y
Options	Y Yes N No

<i>security timeout interval</i>	Positions	15–19	Not applicable to this release.
---	------------------	--------------	---------------------------------

password check option

Position	21
Description	<i>Optional.</i> Indicates whether to enable password verification.
Default	Y
Options	Y Yes N No

dba id**Positions** 23–52**Description** *Required.* Specifies the user ID of the master DBA.**Format** 1–30 alphanumeric or special characters (#, \$, @, and -)**Considerations**

- ◆ This user ID must be defined on the Directory and cannot be ****PUBLIC****.
- ◆ You cannot use the DELETE command to delete this user.

check verification message**Position** 54**Description** *Optional.* Indicates whether the Batch Directory Maintenance facility is to display a verification message before executing a Consistency Check.**Default** Y**Options** Y Yes
N No

generation maintenance option

Not applicable to this release.

Input statement 3

directory name

Positions 7–36

Description *Optional.* Specifies the name of the Directory.

Default TIS/XA DIRECTORY

Format 1–30 characters

Consideration This name is printed in the heading of the Directory reports.

installation name

Positions 38–69

Description *Optional.* Specifies the name of the installation.

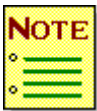
Format 1–32 characters

Consideration This name is printed in the heading of the Directory reports.

Edit Mask

The Edit Mask category contains the format mask used to edit the physical representation of data into a format suitable for displaying or printing. The Edit Mask category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Edit Mask**” on page 431)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)
- ◆ CHANGE (“**ADD/CHANGE: Edit Mask**” on page 431)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ DELETE (“**DELETE: Edit Mask**” on page 434)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)



An Edit Mask entity does not require a naming data transaction.

General consideration

When you delete or rename an Edit Mask, you must also change any External Fields using that name.

ADD/CHANGE: Edit Mask

Use the following input statements to add or change an Edit Mask.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

EM

Positions	4–5
Description	<i>Required.</i> Specifies the Edit Mask category.

edit mask

Positions	7–36
Description	<i>Required.</i> Identifies the Edit Mask being processed.
Format	1–30 alphanumeric or characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Edit Mask name entered during this run.
- ◆ The first character must be #, \$, or alphabetic. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ This name cannot be the same as the name of another unqualified entity: a Conceptual Schema, Directory Component Description, Domain, Reserved Word, Schema, Security Group, Table, User, or another Edit Mask.

- ◆ The following 1-character Edit Mask names are supplied on the release tape. Input Statement 2 describes the function of each character in the mask definition.

Name	Definition	Purpose
A	9999999999999999-	Numeric field with minus sign.
B	ZZZZZZZZZZZZZZZZ9-	Zero suppression to one position with minus sign.
C	ZZZ,ZZZ,ZZZ,ZZZ,ZZ9-	Zero suppression to one position with commas and minus sign.
D	99/99/99	Standard date format.
E	ZZ,ZZZ,ZZZ,ZZZ,ZZZ.99-	Zero suppression with two decimal positions and minus sign.
F	FZZ,ZZZ,ZZZ,ZZZ,ZZZ.99-	Floating zero suppression with two decimal positions.
G	ZZZZZZZZZZZZZZZZ9.9	Zero suppression to one position before decimal and one decimal position.
H	\$*ZZ,ZZZ,ZZZ,ZZZ,ZZZ.99	Zero suppression with floating \$ and * and two decimal positions.
P	999-999-9999	Standard U.S. telephone format.
Q	ZZZZZZZZZZZZZZZZ9	Zero suppression to one position.
S	999-99-9999	U.S. social security number format.
T	99-9999999	Numeric field with hyphen where shown.
Z	ZZZZZZZZZZZZZZZZ	Zero suppression for entire field.

Input statement 2

mask definition

Positions	7–72
Restriction	Must conform to standard Comprehensive Retrieval rules and restrictions. Embedded blanks are not allowed.
Description	<i>Required.</i> Defines the Edit Mask.
Options	<p>F Prints a dollar sign to the left of the first nonzero suppressed digit. If the F is not followed by a Z or 9, the character following the F is printed repeatedly until the first nonsuppressed digit is encountered. If used, F must be the first character in the Edit Mask.</p> <p>9 Prints a digit corresponding to the position of the 9 in the Edit Mask.</p> <p>Z Suppresses any leading zeros. Z cannot be positioned after a 9 in an Edit Mask.</p> <p>\$ Prints a dollar sign to the left of the first nonsuppressed digit if the dollar sign is the first character in the Edit Mask and is followed by a Z or 9. If the dollar sign is positioned elsewhere in the Edit Mask, it will be printed where shown.</p> <p>.</p> <p>,</p> <p>- If shown as the final character in the Edit Mask, a minus sign is printed after the final character in the field to indicate a negative value. If shown in any other position in the Edit Mask, it represents a hyphen and is printed where shown.</p> <p>B Leaves a blank in the position shown.</p> <p>fil Represents any other character you want printed where shown in the Edit Mask. If this character is the first character in the Edit Mask and is followed by a Z, the character is printed repeatedly until a nonsuppressed digit is encountered. If this character is followed by a 9, the character is printed in the first position of the edited field</p>

Consideration See Input Statement 1 for the Edit Mask names supplied on the release tape.

DELETE: Edit Mask

Use the following input statement to delete an Edit Mask.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command code.

EM

Positions	4–5
Description	<i>Required.</i> Specifies the Edit Mask category.

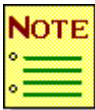
edit mask

Positions	7–36
Description	<i>Required.</i> Identifies the Edit Mask you want to delete.
Format	1–30 alphanumeric or special characters (#, \$, or -)
Consideration	You do not need to enter this name if it is the same as the preceding Edit Mask name entered during this run.

Reserved Word

The Reserved Word category consists of words that have a predefined meaning to TIS/XA and cannot be used in any other capacity. The Reserved Word category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/DELETE: Reserved Word” on page 436)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ DELETE (“ADD/DELETE: Reserved Word” on page 436)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)



A Reserved Word entity does not require a naming data transaction.

ADD/DELETE: Reserved Word

Use the following input statement to add or delete a Reserved Word from the Directory.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add
	DE Delete

RW

Positions	4–5
Description	<i>Required.</i> Specifies the Reserved Word category.

reserved word

Positions	7–36
Description	<i>Required.</i> Identifies the Reserved Word being added or deleted.
Format	1–30 alphabetic characters and any printable special characters

Considerations

- ◆ You do not need to enter this name for a DELETE command if it is the same as the preceding Reserved Word entered during this run.
- ◆ Reserved words must be unique among Schemas, Logical Views, Users, Procedures, Tables, Edit Masks, External Fields, Access Sets, and other Reserved Words.
- ◆ If a Reserved Word is used to name an entity in a category other than those listed above, the name is subject to all Directory Maintenance commands available for the category.

◆ The following Reserved Words are supplied on the Directory:

AFTER	DISPLAY	IDENTITY	NEQ	STATISTICS
AND	DIVIDE	IF	NOT	STATS
ARE	DIVIDED	IS	OF	STRINGS
ARENT	DO	ISNT	OR	SUBMIT
AS	DOES	LARGER	ORDER	SUBSCHEMAS
ASCENDING	DOESNT	LE	PLEASE	SUBSCHEMAS
AT	DONT	LEQ	PLUS	SUM
AVERAGE	END	LESS	PRINT	TEXTS
AVG	EQ	LET	PRIVATE	THAN
BEFORE	EQUAL	LIST	PUBLIC	THE
BETWEEN	EQUALS	LOGICAL VIEWS	QUERIES	THEN
BIGGER	EXPRESSION	LOWER	QUERY	TIMES
BY	EXPRESSIONS	LT	QUERYs	TITLE
BYE	EXPRS	MAX	QUIT	TO
CANCEL	FINISHED	MAXIMUM	RANGE	TOTAL
CHANGES	FROM	MEAN	RECALL	USE
COLUMN	GE	MIN	REPORT	USING
COUNT	GEQ	MINIMUM	REPORTS	VIEWS
DEFINE	GO	MINUS	SAME	WHEN
DEL	GREATER	MORE	SAVE	WHERE
DELETE	GT	MULTIPLIED	SHOW	
DESCENDING	HELP	MULTIPLY	SMALLER	
DIFFERENT	HIGHER	NE	SORT	

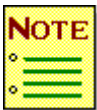
Table

The Table category contains Translate Tables and Validation Tables:

- ◆ Translate Tables allow RDM and Comprehensive Retrieval to convert the physical representation of data into the external representation you want displayed or printed. For example, by using a Translate Table, a value of "02" obtained from the corporate database can be displayed or printed as "February." You specify the name of a Translate Table in the Translate/Edit Name field for Attributes and External Field entities.
- ◆ Validation Tables validate data on RDML requests. The valid data values are stored in these Tables and RDM refers to these values for validation. You specify the name of a Validation Table in the Validation Table field for Domain and Physical Field entities.

You enter the actual Table data with the VARIABLE EDIT command. The data format varies depending on the Table type. The Table category supports the following commands (section references appear in parentheses):

- ◆ ADD ("ADD/DELETE: Table" on page 440)
- ◆ RENAME ("RENAME" on page 504)
- ◆ DELETE ("ADD/DELETE: Table" on page 440)
- ◆ SHORT EDIT ("SHORT EDIT " on page 507)
- ◆ DISPLAY ("DISPLAY " on page 492)
- ◆ SHORT TEXT ("SHORT TEXT " on page 510)
- ◆ LONG EDIT ("LONG EDIT" on page 495)
- ◆ VARIABLE DISPLAY ("VARIABLE DISPLAY" on page 512)
- ◆ LONG TEXT ("LONG TEXT " on page 502)
- ◆ VARIABLE EDIT ("VARIABLE EDIT: Table" on page 441)



A Table entity does not require a naming data transaction.

General considerations

- ◆ When you delete or rename a Table, you must change any Attributes, Domains, External Fields, or Physical Fields that use the Table.
- ◆ Translate Tables with a first character of Z are used in conjunction with user-written exits. Therefore, the letter Z should not be the first character in a translate Table unless the Table is intended for this purpose. Contact your Cincom representative for additional information concerning this feature.

ADD/DELETE: Table

Use the following input statement to add or delete a Table entity.

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add
	DE Delete

TA

Positions	4–5
Description	<i>Required.</i> Specifies the Table category.

table name

Positions	7–36
Description	<i>Required.</i> Identifies the Table being added or deleted.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Table name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is a special character, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ This name cannot be the same as the name of another unqualified entity: a Conceptual Schema, Directory Component Description, Domain, Edit Mask, Reserved Word, Schema, Security Group, User, or another Table.

VARIABLE EDIT: Table

Use the following input statements to define a Table. The second input statement varies depending on the type of Table. The input statements contain data in variable formats defining a Table. Use as many of these statements as necessary to maintain all the data for the applicable Table.

General considerations

The following considerations apply to all types of Tables:

- ◆ Enter only one line of information per statement. Continuation is not allowed.
- ◆ Place an ampersand (&) in the first position of the last statement to indicate the end of data.

Input statement 1

VE

Positions	1–2
Description	<i>Required.</i> Specifies the VARIABLE EDIT command.

TA

Positions	4–5
Description	<i>Required.</i> Specifies the Table category.

table name

Positions	7–36
Description	<i>Required.</i> Identifies the Table you want to define.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Table name entered during this run.

Input statement 2

editor command code

Positions	7–8
Description	<i>Required.</i> Specifies the editor function you want to perform.
Options	AD Add descriptive data CG Change descriptive data DE Delete specified lines of data DI Print specified lines of data HE Print valid editor commands RS Resequence lines of data

sequence 1

Positions	10–13
Description	<i>Required.</i> In combination with the Sequence2/Increment field, indicates the lines of data you want to process. These values depend on the editor command used.
Options	See the table under “ LONG EDIT ,” beginning on page 495.

sequence 2/increment

Positions	15–18
Description	<i>Optional.</i> In combination with the Sequence1 field, indicates the lines of data you want to process. These values depend on the editor command used.
Options	See the table under “ LONG EDIT ,” beginning on page 495.

Input statement 3a—Use only for Translate Tables

argument value,description**Positions** 1–72

argument value

Description *Required.* Identifies an item of data contained in a Physical Field. This data will be replaced by the Description field for display and reporting.

Format Any combination of alphanumeric and special characters. The combined length of the Argument Value and Description fields must not exceed 72 characters.

Considerations

- ◆ A comma must separate the Argument Value and Description fields.
- ◆ You can define a translate Table with character or hexadecimal arguments.
- ◆ Hexadecimal argument values must contain an even number of characters, and all values must contain the same number of characters. Use the format X'hh' where *h* is 0–9 or A–F.
- ◆ Hexadecimal argument Tables are not valid for Comprehensive Retrieval.

description

Description *Required.* Specifies the value you want to substitute for the Argument Value field in Comprehensive Retrieval reports.

Format Any combination of alphanumeric and special characters. The combined length of the Argument Value and Description fields must not exceed 72 characters.

Considerations

- ◆ The length of this field must not exceed the length defined for the associated External Field.
- ◆ Descriptions may vary in length within a Table definition.
- ◆ Translate Tables can be specified in the Translate/Edit Name field for Attribute and External Field entities. RDM and Comprehensive Retrieval will access the Table to translate data.

Input statement 3b—Use only for Validation Tables

argument value

- Positions** 1–72
- Description** *Required.* Identifies a valid item of data contained in a Physical Field.
- Format** Any combination of alphanumeric and special characters. The length must not exceed 72 characters.
- Consideration** Validation Tables can be specified in the Validation Table field for Domain and Physical Field entities. RDM will access this Table to validate the input data.

Maintaining User data

This chapter presents the Directory Maintenance input statements used to maintain the User data. These input statements are presented in alphabetical sequence by category and command within each category. Headers are included to help you quickly find the category and command you want to process.

The User data categories are:

- ◆ Maintenance Restriction
- ◆ Procedure
- ◆ Security Group
- ◆ User

Coding command statements

Code command statements as follows:

```
000000000111111111222222222233333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
cm ct xxxxxx                                     yyyyyyyy
```

where:

cm is the command code

ct is the category code

xxxxxx is an entity name or value

yyyyyyyy is the optional sequence number

After you become familiar with the format of the command statements, use “[Command statement layouts](#)” on page 513 for quick reference of their general layout. That section graphically presents the command statements and all the fields you enter.

The considerations that follow apply to all input statements. You should be familiar with them before you begin entering data.

Naming data considerations

Naming data transactions specify the required qualifiers for the command statements within each category (see “[Audit listing](#)” on page 34). A naming data transaction contains only the category code in positions 4 and 5, and the name of the qualifying entity beginning in position 7. The qualifier name you enter, such as a schema or file name, becomes a sticky field and is carried over through all subsequent statements until changed. The qualifiers required as naming data are shown before the command statements for each category.



Some fields and relationships designated for use by RDM may not be supported by RDM with this release. However, RDM fields designated as required by the Directory must have a value or an error will result.

Command statement considerations

The first input statement for every command is in this standard format:

- ◆ positions 1–2 = command code
- ◆ positions 4–5 = category code
- ◆ positions 7–36 = entity name

Naming conventions for an entity are shown with the ADD command for each category. For example, the first character must be alphabetic, #, \$ or -. Any other references to an entity name contain the description and format but not the conventions. The table under “[Naming data transactions](#)” on page 29 summarizes all naming conventions.

Once you enter the name of an entity, that name becomes a sticky field and is carried over through all subsequent statements until changed. Sticky fields are identified in the considerations for each applicable name by a statement similar to this: You do not need to enter this name if it is the same as the preceding Procedure name entered during this run. However, you can always name an entity again, even if it is already the value of a sticky field.

The field positions for most ADD and CHANGE commands are identical. When a field is blank for an ADD command and a default value is available, Directory Maintenance uses the default value. When a field is blank for a CHANGE command, the field retains any existing value.

You can use default values for many fields. Many default values are set during installation using special default entities. You can use Directory Maintenance to change these default values. “[Supplied default values](#)” on page 557 lists the initial values of these default entities. Other default values are derived from Directory Maintenance software. These default values are listed in this manual and cannot be changed.

A field that previously contained a value is automatically blanked if you place the special null character as the first nonblank character within the field (see “[Eject option](#)” on page 79). The default null character is @. For example, assume the Default Value field in positions 7–38 for a Physical Field contained a value. Entering the null character within that field would delete that value:

```
0001111111111122222222223333333333
78901234567890123456789012345678
@
```

Entity name fields contain 30 positions and must not contain embedded blanks. If an entity name does not contain 30 characters, you can code the name in any position within the field. Similarly, you do not have to right or left justify data values as long as you position the value within the specified field. For example, the length of an External Field is coded in positions 7–11. If the length is 9, you can code 9 in any position in the field, as shown below:

```
00011
78901
9
```

In the format descriptions, fields are marked as follows:

- ◆ *Required.* Fields must contain a value; you can enter a value or accept a default value. Required fields cannot contain the null character. If you use the null character in a required field, an error results.
- ◆ *Optional.* Fields can be blank.
- ◆ *Conditional.* Fields may be *Required* or *Optional* depending on the value you enter in another field.

Maintenance Restriction

A Maintenance Restriction category defines a set of rules that permit or deny access to other Directory categories. These rules apply to a Directory Maintenance User (DBA) who is related to the qualifying Security Group.

The Maintenance Restriction category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/CHANGE: Maintenance Restriction” on page 450)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ CHANGE (“ADD/CHANGE: Maintenance Restriction” on page 450)
- ◆ RENAME (“RENAME” on page 504)
- ◆ DELETE (“DELETE: Maintenance Restriction” on page 455)

Naming data transaction

Enter this statement only if you have not entered the naming data during this run.

```
000000000111111111222222222333333333333444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
SG security group
```

SG

Positions	4–5
Description	<i>Required.</i> Specifies the Security Group category.

security group

Positions	7–36
Description	<i>Required.</i> Identifies an existing Security Group that contains this Maintenance Restriction.

Consideration You do not need to enter this name if it is the same as the preceding Security Group name entered during this run.

ADD/CHANGE: Maintenance Restriction

Use the following input statements to add or change a Maintenance Restriction entity. For information on how to add a Maintenance Restriction, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

MR

Positions	4–5
Description	<i>Required.</i> Specifies the Maintenance Restriction category.

maintenance restriction

Positions	7–14
Description	<i>Required.</i> Identifies the Maintenance Restriction being processed.
Format	1–8 alphanumeric or special characters (#, \$, and @)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Maintenance Restriction name entered during this run.
- ◆ The first character must be alphabetic, #, \$, or @. The remaining characters can be any combination of alphanumeric characters and the special characters #, \$, and @.
- ◆ Each Maintenance Restriction name must be unique within a Security Group.

Input statement 2

permit/deny option

Positions	7–12
Description	<i>Optional.</i> Indicates whether the User will be permitted or denied access to the specified entities/commands/categories.
Default	DE
Options	DE or DENY PE or PERMIT
Consideration	Where a Security Group contains more than one Maintenance Restriction or a User is related to more than one Security Group, the following rules apply: <ul style="list-style-type: none"> ◆ DENY overrides PERMIT on an equal level. ◆ DENY at a lower level overrides PERMIT at a higher level. ◆ PERMIT at a lower level overrides DENY at a higher level.

permit/deny category code

Positions	14–15
Description	<i>Optional.</i> Specifies the category you want to permit or deny.
Format	Any valid 2-character category code.

permit/deny command code

Positions	17–18
Description	<i>Optional.</i> Specifies the command you want to permit or deny.
Format	Any valid 2-character command code
Consideration	The command code entered in this field must be valid for the category entered in the Permit/Deny Category Code field.

permit/deny subcommand/subcategory code

Positions 20–21

Description *Optional.* Specifies the subcommand or subcategory you want to permit or deny.

Format Any valid 2-character subcommand or subcategory code

Considerations

- ◆ This field must be blank if the command being permitted or denied does not have any subcommands or subcategories associated with it.
- ◆ If you enter a value in this field, you must also enter a value in the Permit/Deny Command Code field.
- ◆ The subcommand/subcategory code entered in this field must be valid for the command entered in the Permit/Deny Command Code field and the category entered in the Permit/Deny Category Code field.

Input statement 3

naming data category code

Positions 7–8

Description *Optional.* Specifies the category code of an entity you want to permit or deny.

Format Any valid 2-character category code

Considerations

- ◆ If you enter a value in this field, the naming data category code must be valid for the category specified in the Permit/Deny Category Code field.
- ◆ When the ADD command is specified, you cannot enter the same code in this field and in the Permit/Deny Category Code field.

entity name 1

Positions 10–39

Description *Optional.* Specifies the entity or qualifying entity you want to permit or deny.

Format Any valid Directory entity name

Consideration If you enter a value in this field, you must also enter a value in the Naming Data Category Code field.

entity name 2

Positions 41–70

Description *Optional.* Specifies the entity you want to permit or deny or a qualifying entity.

Format Any valid Directory entity name

Consideration If you enter a value in this field, you must also enter a value in the Naming Data Category Code field.

Input statement 4

entity name 3

- Positions** 7–36
- Description** *Optional.* Specifies the entity you want to permit or deny or a qualifying entity.
- Format** Any valid Directory entity name
- Consideration** If you enter a value in this field, you must also enter a value in the Naming Data Category Code field.
-

entity name 4

- Positions** 38–67
- Description** *Optional.* Specifies the entity you want to permit or deny or a qualifying entity.
- Format** Any valid Directory entity name
- Consideration** If you enter a value in this field, you must also enter a value in the Naming Data Category Code field.

DELETE: Maintenance Restriction

Use the following input statement to delete a Maintenance Restriction.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

MR

Positions	4–5
Description	<i>Required.</i> Specifies the Maintenance Restriction category.

maintenance restriction

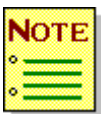
Positions	7–14
Description	<i>Required.</i> Identifies the Maintenance Restriction you want to delete.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding Maintenance Restriction name entered during this run.

Procedure

The Procedure category defines retrieval Procedures used by RDM and Comprehensive Retrieval. The Procedure category supports the following commands (section references appear in parentheses):

- ◆ ADD (“**ADD/CHANGE: Procedure**” on page 458)
- ◆ LONG TEXT (“**LONG TEXT** ” on page 502)
- ◆ CHANGE (“**ADD/CHANGE: Procedure**” on page 458)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ COPY (“**COPY: Procedure**” on page 460)
- ◆ SHORT EDIT (“**SHORT EDIT** ” on page 507)
- ◆ DELETE (“**DELETE: Procedure**” on page 462)
- ◆ SHORT TEXT (“**SHORT TEXT** ” on page 510)
- ◆ DISPLAY (“**DISPLAY** ” on page 492)
- ◆ VARIABLE DISPLAY (see NOTE)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ VARIABLE EDIT (see NOTE)

Note that the ADD, CHANGE, DISPLAY, and COPY commands are valid only for RDM retrieval Procedures. Use Comprehensive Retrieval to add or change Comprehensive Retrieval Procedures.



For the Procedure category, the VARIABLE DISPLAY and VARIABLE EDIT commands are not applicable to this release. Use Comprehensive Retrieval to enter variable data for a Comprehensive Retrieval Procedure.

Naming data transaction

Enter this statement only if you have not entered the naming data during this run.

```
0000000001111111112222222223333333334444444445555555556666666667777777778
1234567890123456789012345678901234567890123456789012345678901234567890
US user
```

US

Positions	4–5
Description	<i>Required.</i> Specifies the User category.

user

Positions	7–36
Description	<i>Required.</i> Identifies an existing group or individual that can access this Procedure.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding User name entered during this run.
- ◆ If you do not enter a value or you enter ****PUBLIC****, all Users may access the Procedure.

ADD/CHANGE: Procedure

Use the following input statements to add or change a Procedure entity used by RDM or Comprehensive Retrieval.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

PR

Positions	4–5
Description	<i>Required.</i> Specifies the Procedure category.

procedure

Positions	7–36
Description	<i>Required.</i> Identifies the Procedure being processed.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Procedure name entered during this run.
- ◆ The first character must be alphabetic, #, or \$. If the first character is a # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters and hyphens. However, the final character cannot be a hyphen.
- ◆ A Procedure name cannot be a Reserved Word.
- ◆ Each Procedure name must be unique within a User.
- ◆ If a private and public Procedure have the same name, the User who has access to the private Procedure will always get the private Procedure. All other Users will have access to only the public Procedure.

Input statement 2

language

Positions	7–16
Description	<i>Optional.</i> Specifies the programming language.
Options	COBOL COBOL/XT PASCAL PL/I

procedure type

Position	18
Restriction	Valid only with the ADD command. Must be L for this release.
Description	<i>Required.</i> Identifies the Procedure as an RDM Procedure.
Options	L RDM Procedure

COPY: Procedure

Use the following input statements to copy an RDM Procedure to the same or another User.

Input statement 1

CO	
Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

PR	
Positions	4–5
Description	<i>Required.</i> Specifies the Procedure category.

source procedure

Positions	7–36
Description	<i>Required.</i> Identifies the Procedure you want to copy.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Procedure name entered during this run.

Input statement 2

target user

Positions	7–36
Description	<i>Optional.</i> Identifies the User to whom you want to copy the Procedure.
Default	**PUBLIC**
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding target user name entered during this run.

target procedure

Positions	38–67
Description	<i>Optional.</i> Specifies the name of the new Procedure.
Default	Source procedure
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	If the User name specified in the naming data transaction and the Target User field are the same, do not use the same name in this field and the Source Procedure Name field.

DELETE: Procedure

Use the following input statement to delete an existing Procedure.

DE	
Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

PR	
Positions	4–5
Description	<i>Required.</i> Specifies the Procedure category.

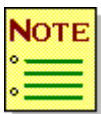
<i>procedure</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the Procedure you want to delete.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Procedure name entered during this run.

Security Group

A Security Group category contains a collection of Maintenance Restrictions that enforce Directory access rules. The Security Group can be related to one or more Users to restrict their access to Directory Maintenance.

The Security Group category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD: Security Group” on page 465)
- ◆ RELATE (“RELATE/REMOVE: Security Group” on page 468)
- ◆ COPY (“COPY: Security Group” on page 466)
- ◆ REMOVE (“RELATE/REMOVE: Security Group” on page 468)
- ◆ DELETE (“DELETE: Security Group” on page 467)
- ◆ RENAME (“RENAME” on page 504)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: Security Group” on page 470)



A Security Group entity does not require a naming data transaction.

General considerations

- ◆ A Security Group can contain multiple Maintenance Restrictions and can be related to multiple Users. A User can also be related to more than one Security Group.
- ◆ Any changes to the Security Groups and Maintenance Restrictions related to a User do not take effect until the next time the User signs on.
- ◆ Master DBAs must never allow a Security Group to be assigned to their user ID that restricts their access to Security Groups, Maintenance Restrictions, or Users. Should this occur, contact your Cincom service representative immediately.
- ◆ For information on how to add a Security Group, refer to the *SUPRA Server PDM and Directory Administration Guide (OS/390 & VSE)*, P26-2250.

ADD: Security Group

Use the following input statement to add a Security Group.

AD

Positions	1–2
Description	<i>Required.</i> Specifies the ADD command.

SG

Positions	4–5
Description	<i>Required.</i> Specifies the Security Group category.

security group

Positions	7–36
Description	<i>Required.</i> Specifies the Security Group you want to add.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ The first character must be alphabetic, #, or \$. The remaining characters can be any combination of alphanumeric characters and hyphens.
- ◆ This name cannot be the same as the name of another unqualified entity: a Conceptual Schema, Directory Component Description, Domain, Edit Mask, Reserved Word, Schema, Table, User, or another Security Group.

COPY: Security Group

Use the following input statements to copy all information from one Security Group (source) into another Security Group (target).

Input statement 1

CO	
Positions	1–2
Description	<i>Required.</i> Specifies the COPY command.

SG	
Positions	4–5
Description	<i>Required.</i> Specifies the Security Group category.

<i>source security group</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the Security Group you want to copy.
Format	1–30 alphanumeric or special characters (#, \$, or -)

Input statement 2

<i>target security group</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the new Security Group.
Format	1–30 alphanumeric or special characters (#, \$, or -)

Considerations

- ◆ Directory Maintenance copies all maintenance restrictions defined for the source Security Group to the target Security Group.
- ◆ Directory Maintenance does not copy any relationships between the source Security Group and Users.

DELETE: Security Group

Use the following input statement to delete a Security Group entity.

DE

Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

SG

Positions	4–5
Description	<i>Required.</i> Specifies the Security Group category.

security group

Positions	7–36
Description	<i>Required.</i> Identifies the Security Group you want to delete.
Format	1–30 alphanumeric or special characters (#, \$, or -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Security Group name entered during this run.
- ◆ Directory Maintenance deletes all Security Group-to-User relationships.
- ◆ Directory Maintenance deletes all Maintenance Restrictions defined for this Security Group.

RELATE/REMOVE: Security Group

Use the following input statements to establish or remove the relationship between a Security Group and User. To list a Security Group's relationships, use the STRUCTURE DISPLAY command described in "STRUCTURE DISPLAY: Security Group" on page 470.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

SG

Positions	4–5
Description	<i>Required.</i> Specifies the Security Group category.

security group

Positions	7–36
Description	<i>Required.</i> Identifies the Security Group for which the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Security Group name entered during this run.

Input statement 2

US

Positions	7–8
Description	<i>Required.</i> Specifies the User subcategory for the relationship.

user

Positions	10–39
Description	<i>Required.</i> Specifies the name of the related User or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding User name entered during this run.
- ◆ ALL. is not valid with the RELATE command.
- ◆ With the REMOVE command, you can enter ALL. to remove all relationships between this Security Group and the associated Users.
- ◆ You should ensure that all Users do not get related to Security Groups such that no User can perform certain maintenance functions.
- ◆ When you relate a Security Group to a User, Directory Maintenance does not apply the Maintenance Restrictions to the User until the User signs off and then signs back on to Directory Maintenance.

STRUCTURE DISPLAY: Security Group

Use the following input statements to list the Security Group’s associated Maintenance Restrictions and Users. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

SG	
Positions	4–5
Description	<i>Required.</i> Specifies the Security Group category.

security group	
Positions	7–36 security group
Description	<i>Required.</i> Identifies the name of the Security Group.
Format	1–30 alphanumeric or special characters (#, \$, or -)
Consideration	You do not need to enter this name if it is the same as the preceding Security Group name entered during this run.

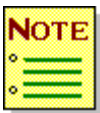
Input statement 2

subcategory code	
Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	MR Maintenance Restriction US User
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

User

The User category contains information about each User of Directory Maintenance, SPECTRA, Comprehensive Retrieval, and RDM. Users not defined in the Directory cannot sign on to any of these components. The User category supports the following commands (section references appear in parentheses):

- ◆ ADD (“ADD/CHANGE: User” on page 472)
- ◆ RELATIONSHIP DISPLAY (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: User” on page 477)
- ◆ CHANGE (“ADD/CHANGE: User” on page 472)
- ◆ REMOVE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: User” on page 477)
- ◆ DELETE (“DELETE: User” on page 476)
- ◆ SHORT EDIT (“SHORT EDIT ” on page 507)
- ◆ DISPLAY (“DISPLAY ” on page 492)
- ◆ SHORT TEXT (“SHORT TEXT ” on page 510)
- ◆ LONG EDIT (“LONG EDIT” on page 495)
- ◆ STRUCTURE DISPLAY (“STRUCTURE DISPLAY: User” on page 486)
- ◆ LONG TEXT (“LONG TEXT ” on page 502)
- ◆ VARIABLE DISPLAY (“VARIABLE DISPLAY” on page 512)
- ◆ RELATE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: User” on page 477)
- ◆ VARIABLE EDIT (“VARIABLE EDIT: User” on page 488)
- ◆ RELATIONSHIP CHANGE (“RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: User” on page 477)



A User entity does not require a naming data transaction.

ADD/CHANGE: User

Use the following input statements to define or change a User description:

Input statement 1

command code	
Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	AD Add CG Change

US	
Positions	4–5
Description	<i>Required.</i> Specifies the User category.

user	
Positions	7–36
Description	<i>Optional.</i> Identifies the User being processed.
Default	**PUBLIC**
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding User name entered during this run.
- ◆ Names must be 1–30 alphanumeric characters. The first character must be alphabetic, #, or \$. If the first character is # or \$, the second character must be alphabetic. The remaining characters can be any combination of alphanumeric characters or hyphens. However, the last character cannot be a hyphen.
- ◆ This name cannot be the same as the name of another unqualified entity: a Conceptual Schema, Directory Component Description, Domain, Edit Mask, Reserved Word, Schema, Security Group, Table, or another User.
- ◆ This name is used to sign on to Comprehensive Retrieval, RDM, and Directory Maintenance.

Input statement 2

user description

Positions	7–38
Description	<i>Optional.</i> Indicates the name or information you want displayed on message screens to identify the User.
Format	1–32 characters
Consideration	This name may be a nickname.

Input statement 3

address line 1

Positions	7–38
Description	<i>Optional.</i> Indicates the first line of the User's address.
Format	1–32 characters

Input statement 4

address line 2

Positions	7–38
Description	<i>Optional.</i> Indicates the second line of the User's address.
Format	1–32 characters

Input statement 5

address line 3

Positions	17–38
Description	<i>Optional.</i> Indicates the third line of the User's address.
Format	1–22 characters

security group

Positions	40–69
Description	<i>Optional.</i> Indicates the initial Security Group related to the User.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	If you enter a value in this field, it must be the name of an already existing Security Group.

Input statement 6

phone number

Positions	7–22
Description	<i>Optional.</i> Indicates the User's phone number.
Format	1–16 characters

password

Positions	24–53
Description	<i>Optional.</i> Indicates the password assigned to this User.
Format	1–30 alphanumeric characters
Considerations	<ul style="list-style-type: none">◆ This field is required if you want Directory Maintenance to check passwords during sign-in.◆ Directory Maintenance does not display or print the password.

dba option

Position	55
Description	<i>Required.</i> Indicates whether this User is a database administrator with access to Directory Maintenance.
Options	Y Yes N No

normal option

Position	57
Description	<i>Required.</i> Indicates that the user is allowed to perform Normal Design.
Options	Y Yes N No

user language

Positions	59–68
Description	<i>Required.</i> Specifies the language to be used.
Options	ENGLISH FRENCH GERMAN SPANISH
Consideration	English is the only language supported by this release. If you enter any other value in this field, it is ignored.

DELETE: User

Use the following input statement to delete a User entity.

DE	
Positions	1–2
Description	<i>Required.</i> Specifies the DELETE command.

US	
Positions	4–5
Description	<i>Required.</i> Specifies the User category.

<i>user</i>	
Positions	7–36
Description	<i>Required.</i> Identifies the User being deleted.
Format	1–30 alphanumeric or special characters (#, \$, or -)
Consideration	You do not need to enter this name if it is the same as the preceding User name entered during this run.

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE: User

Use the following input statements to establish, change, print, or remove a relationship between a User and the associated Attributes, External Fields, Logical Views, Relations, and Security Groups. You may also change or print the Logical View and Relation relationships. To list a User's relationships, use the STRUCTURE DISPLAY command described in "**STRUCTURE DISPLAY: User**" on page 486.

This section includes the following input statements:

- ◆ User/Attributes
- ◆ User/External Fields
- ◆ User/Logical Views
- ◆ **User/Relations**
- ◆ **User/Security Groups**

The input statements for each subcategory are described separately.

User/Attributes relationship

This function is not applicable to this release. Directory Maintenance allows the definition, but RDM does not use it.

User/External Fields relationship

This function is not applicable to this release. Directory Maintenance allows the definition, but RDM does not use it.

User/Logical Views relationship

Use the following input statements to establish, change, print, or remove relationships between a User and the Logical Views that can be accessed by that User. Use only the first two input statements to remove or print the relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship data RD Print relationship data RL Establish relationship RM Remove relationship

US

Positions	4–5
Description	<i>Required.</i> Specifies the User category.

user

Positions	7–36
Description	<i>Required.</i> Identifies the User for whom the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding User name entered during this run.

Input statement 2

LV

Positions	7–8
Description	<i>Required.</i> Specifies the Logical View subcategory for the relationship.

qualifying schema

Positions	10–39
Description	<i>Required.</i> Identifies the schema qualifying the Logical View.
Format	1–8 alphanumeric or special characters (#, \$, and @)
Consideration	You do not need to enter this name if it is the same as the preceding schema name entered during this run.

logical view

Positions	41–70
Description	<i>Required.</i> Identifies the name of the related Logical View or ALL.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Logical View name entered during this run.
- ◆ ALL. is not valid with the RELATE command.
- ◆ With the RELATIONSHIP DISPLAY command, you can enter ALL. to print all relationships between the User and the associated Logical Views.
- ◆ With the REMOVE command, you can enter ALL. to remove all relationships between the User and the associated Logical Views.

Input statement 3—RELATE and RELATIONSHIP CHANGE command only

<i>batch delete option</i>	Position 7	Not applicable to this release.
<i>online delete option</i>	Position 9	Not applicable to this release.
<i>batch save option</i>	Position 11	Not applicable to this release.
<i>online save option</i>	Position 13	Not applicable to this release.
<i>batch define queries option</i>	Position 15	Not applicable to this release.
<i>online define queries option</i>	Position 17	Not applicable to this release.
<i>batch execute queries option</i>	Position 19	Not applicable to this release.
<i>online execute queries option</i>	Position 21	Not applicable to this release.
<i>online submit option</i>	Position 23	Not applicable to this release.
<i>define comprehensive retrieval option</i>	Position 25	Not applicable to this release.
<i>execute comprehensive retrieval option</i>	Position 27	Not applicable to this release.
<i>define generalized updates option</i>	Position 29	Not applicable to this release.
<i>execute generalized updates option</i>	Position 31	Not applicable to this release.
<i>define RDM applications option</i>	Position 33	Not applicable to this release.
<i>execute RDM applications option</i>	Position 35	Not applicable to this release.

User/Relations relationship

Use the following input statements to establish and change relationships between a User and the Relations that can be accessed by that User. Use only the first two statements to remove or print the relationships.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RC Change relationship RD Print relationship RL Establish relationship RM Remove relationship

US

Positions	4–5
Description	<i>Required.</i> Specifies the User category.

user

Positions	7–36
Description	<i>Required.</i> Identifies the User for whom the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding User name entered during this run.

Input statement 2

RE

Positions	7–8
Description	<i>Required.</i> Specifies the Relation subcategory for the relationship.

qualifying conceptual schema

Positions	10–39
Description	<i>Required.</i> Identifies the Conceptual Schema qualifying the Relation.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding Conceptual Schema name entered during this run.

relation

Positions	41–70
Description	<i>Required.</i> Specifies the name of the related Relation or ALL.
Format	1–25 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Relation name entered during this run.
- ◆ ALL. is not valid with the RELATE command.
- ◆ With the RELATIONSHIP DISPLAY command, you can enter ALL. to print all relationships between this User and associated Relations.
- ◆ With the REMOVE command, you can enter ALL. to remove all relationships between this User and associated Relations.

Input statement 3—RELATE and RELATIONSHIP CHANGE command only

<i>batch delete option</i>	Position 7	Not applicable to this release.
<i>online delete option</i>	Position 9	Not applicable to this release.
<i>batch save option</i>	Position 11	Not applicable to this release.
<i>online save option</i>	Position 13	Not applicable to this release.
<i>batch define queries option</i>	Position 15	Not applicable to this release.
<i>online define queries option</i>	Position 17	Not applicable to this release.
<i>batch execute queries option</i>	Position 19	Not applicable to this release.
<i>online execute queries option</i>	Position 21	Not applicable to this release.
<i>online submit option</i>	Position 23	Not applicable to this release.
<i>define comprehensive retrieval option</i>	Position 25	Not applicable to this release.
<i>execute comprehensive retrieval option</i>	Position 27	Not applicable to this release.
<i>define generalized updates option</i>	Position 29	Not applicable to this release.
<i>execute generalized updates option</i>	Position 31	Not applicable to this release.
<i>define RDM applications option</i>	Position 33	Not applicable to this release.
<i>execute RDM applications option</i>	Position 35	Not applicable to this release.

User/Security Group relationship

Use the following input statements to establish or remove the relationship between a User and Security Group.

Input statement 1

command code

Positions	1–2
Description	<i>Required.</i> Specifies the command you want to execute.
Options	RL Establish relationship RM Remove relationship

US

Positions	4–5
Description	<i>Required.</i> Specifies the User category.

user

Positions	7–36
Description	<i>Required.</i> Identifies the User for whom the relationship is being maintained.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding User name entered during this run.

Input statement 2

SG

Positions	7–8
Description	<i>Required.</i> Specifies the Security Group subcategory.

security group

Positions	10–39
Description	<i>Required.</i> Specifies the Security Group you want to relate to or remove from the User.
Format	1–30 alphanumeric or special characters (#, \$, and -)

Considerations

- ◆ You do not need to enter this name if it is the same as the preceding Security Group name entered during this run.
- ◆ You should ensure that all Users do not get related to Security Groups such that no User can perform certain functions.

STRUCTURE DISPLAY: User

Use the following input statements to list the User’s associated Attributes, External Fields, Logical Views, Procedures, Relations, and Security Groups. You must use both input statements to list each structure.

Input statement 1

SD	
Positions	1–2
Description	<i>Required.</i> Specifies the STRUCTURE DISPLAY command.

US	
Positions	4–5
Description	<i>Required.</i> Specifies the User category.

<i>user</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the User.
Format	1–30 alphanumeric or special characters (#, \$, or -)
Consideration	You do not need to enter this name if it is the same as the preceding User name entered during this run.

Input statement 2

subcategory code

Positions	7–8
Description	<i>Required.</i> Specifies the subcategory you want to use in the structure display.
Options	AT Attribute XF External Field LV Logical View PR Procedure RE Relation SG Security Group
Consideration	The table under “ Relationship categories and commands ” on page 50 shows the structure displayed for each subcategory.

VARIABLE EDIT: User

Use the following input statements to add, change, or display the variable data describing a User. This command uses the Long Text Editor and is in the same format as the LONG EDIT command.

Input statement 1

VE	
Positions	1–2
Description	<i>Required.</i> Specifies the VARIABLE EDIT command.

US	
Positions	4–5
Description	<i>Required.</i> Specifies the User category.

<i>user</i>	
Positions	7–36
Description	<i>Required.</i> Specifies the name of the User.
Format	1–30 alphanumeric or special characters (#, \$, and -)
Consideration	You do not need to enter this name if it is the same as the preceding User name entered during this run.

Input statement 2

editor command code

Positions	7–8
Description	<i>Required.</i> Specifies the function you want to perform.
Options	AD Add User data CG Change User data DE Delete specified lines of data DI Print specified lines of data RS Resequence existing lines of data

Consideration DE deletes the lines specified in the sequence fields but does not print the lines of text. If you are unsure of the lines you want to delete, select DI to print the text before deletion.

sequence 1

Positions	10–13
Description	<i>Required.</i> Indicates which lines of data you want to process. These values depend on the editor command used.
Format	4 alphabetic or numeric characters
Options	See the table under “ LONG EDIT ,” beginning on page 495.

sequence 2/increment

Positions	15–18
Description	<i>Optional.</i> Indicates which lines of data you want to process. These values depend on the editor command used.
Format	4 alphabetic or numeric characters
Options	See the table under “ LONG EDIT ,” beginning on page 495.

Input statement 3

variable length data

Positions 1–72

Description *Required.* Contains user data.

Format 1–72 alphanumeric and special characters

Considerations

- ◆ Use as many of these statements as necessary to maintain all the data associated with the User.
- ◆ Enter only one line of information per statement. Continuation is not allowed.
- ◆ Do not use embedded blanks within the data.
- ◆ A blank terminates a data line. Enter comment information after a blank.
- ◆ Place an ampersand (&) in position 1 of the last statement to indicate the end of the data.

8

Using the common commands

This chapter presents those commands that use common input statements regardless of the category you are maintaining. Some of these commands use only a single input statement; other commands use multiple input statements. In all cases, the data that you enter is the same for each command. See the appropriate section for a detailed format description for each command.

- ◆ DISPLAY (“**DISPLAY**” on page 492)
- ◆ LONG EDIT (“**LONG EDIT**” on page 495)
- ◆ LONG TEXT (“**LONG TEXT**” on page 502)
- ◆ RENAME (“**RENAME**” on page 504)
- ◆ SHORT EDIT (“**SHORT EDIT**” on page 507)
- ◆ SHORT TEXT (“**SHORT TEXT**” on page 510)
- ◆ VARIABLE DISPLAY (“**VARIABLE DISPLAY**” on page 512)

DISPLAY

Use the DISPLAY command to print the following data:

- ◆ The attribute data that was added with the ADD command or maintained with the CHANGE command and stored for an entity.
- ◆ The variable attribute data for an entity that was added or maintained with the VARIABLE EDIT command. This data may be available for Access Set, Table, and User entities.

The following categories can use the DISPLAY command. See the appropriate section for entity naming conventions.

- ◆ ACCESS SET (“Access Set” on page 167)
- ◆ ATTRIBUTE (“Attribute” on page 89)
- ◆ BUFFER POOL (“Buffer Pool” on page 231)
- ◆ CONCEPTUAL SCHEMA (“Conceptual Schema” on page 110)
- ◆ DIRECTORY COMPONENT DESCRIPTION (“Directory Component Description” on page 425)
- ◆ DOMAIN (“Domain” on page 119)
- ◆ EDIT MASK (“Edit Mask” on page 430)
- ◆ ENVIRONMENT DESCRIPTION (“Environment Description” on page 239)
- ◆ EXTERNAL FIELD (“External Field” on page 182)
- ◆ FILE (“File” on page 268)
- ◆ FOREIGN KEY (“Foreign Key” on page 131)
- ◆ INTERNAL RECORD (“Internal Record” on page 317)
- ◆ KEY CODE (“Key Code” on page 327)
- ◆ LOG GROUP (“Log Group” on page 336)
- ◆ LOGICAL VIEW (“Logical View” on page 206)
- ◆ MAINTENANCE RESTRICTION (“Maintenance Restriction” on page 449)
- ◆ PHYSICAL FIELD (“Physical Field” on page 345)
- ◆ PROCEDURE (“Procedure” on page 456)
- ◆ RELATION (“Relation” on page 142)
- ◆ RESERVED WORD (“Reserved Word” on page 435)
- ◆ SCHEMA (“Schema” on page 386)
- ◆ SECONDARY KEY (“Secondary Key” on page 401)
- ◆ SECURITY GROUP (“Security Group” on page 463)
- ◆ TABLE (“Table” on page 438)
- ◆ USER (“User” on page 471)

DI**Positions** 1–2**Description** *Required.* Specifies the DISPLAY command.

category code**Positions** 4–5**Description** *Required.* Specifies the category of the entity you want to print.

Options	AS Access Set	KC Key Code
	AT Attribute	LV Logical View
	BP Buffer Pool	MR Maintenance Restriction
	CS Conceptual Schema	PF Physical Field
	DC Directory Component Description	PR Procedure
	DM Domain	SC Schema
	EM Edit Mask	RE Relation
	ED Environment Description	RW Reserved Word
	XF External Field	SK Secondary Key
	FI File	SG Security Group
	LG Log Group	TA Table
	FK Foreign Key	US User
	IR Internal Record	

entity name

Positions 7–36

Description *Required.* Specifies the name of the entity for which attribute data will be printed.

Format 1–30 alphanumeric characters

Considerations

- ◆ See the appropriate category section for naming conventions.
- ◆ You do not need to enter this name if it is the same as the preceding entity name entered within the category during this run.

LONG EDIT

Use the LONG EDIT command to maintain one or more lines of descriptive text about an entity. Each line can contain up to 72 characters. You use the LONG EDIT command to maintain the Access Set and Table categories.

The LONG EDIT command uses three types of input statements. Use the first input statement to enter the naming data. Use the second input statement to enter the editor command and sequence numbers. These two input statements are the same for all categories. Use the third type of input statement to enter the variable text. Use as many of these statements as necessary to enter all the information.

Directory Maintenance prints text lines in the sequence they are stored in the Directory. A sequence number is printed on each line. When you add, change, or delete lines, Directory Maintenance rennumbers the lines in increments of 100, starting at 100. If the sequence numbers exceed 9900, Directory Maintenance rennumbers the lines in increments of 1, starting at 1.

The following categories can use the LONG EDIT command. See the appropriate section for entity naming conventions.

- ◆ ACCESS SET (“[Access Set](#)” on page 167)
- ◆ ATTRIBUTE (“[Attribute](#)” on page 89)
- ◆ CONCEPTUAL SCHEMA (“[Conceptual Schema](#)” on page 110)
- ◆ DIRECTORY COMPONENT DESCRIPTION (“[Directory Component Description](#)” on page 425)
- ◆ DOMAIN (“[Domain](#)” on page 119)
- ◆ EDIT MASK (“[Edit Mask](#)” on page 430)
- ◆ ENVIRONMENT DESCRIPTION (“[Environment Description](#)” on page 239)
- ◆ EXTERNAL FIELD (“[External Field](#)” on page 182)
- ◆ FILE (“[File](#)” on page 268)
- ◆ FOREIGN KEY (“[Foreign Key](#)” on page 131)
- ◆ INTERNAL RECORD (“[Internal Record](#)” on page 317)
- ◆ KEY CODE (“[Key Code](#)” on page 327)
- ◆ LOGICAL VIEW (“[Logical View](#)” on page 206)
- ◆ PHYSICAL FIELD (“[Physical Field](#)” on page 345)
- ◆ PROCEDURE (“[Procedure](#)” on page 456)
- ◆ RELATION (“[Relation](#)” on page 142)
- ◆ RESERVED WORD (“[Reserved Word](#)” on page 435)
- ◆ SCHEMA (“[Schema](#)” on page 386)
- ◆ SECONDARY KEY (“[Secondary Key](#)” on page 401)
- ◆ SECURITY GROUP (“[Security Group](#)” on page 463)
- ◆ TABLE (“[Table](#)” on page 438)
- ◆ USER (“[User](#)” on page 471)

Input statement 1**LE**

Positions	1–2
Description	<i>Required.</i> Specifies the LONG EDIT command.

category code

Positions	4–5																								
Description	<i>Required.</i> Specifies the category you want to maintain.																								
Options	<table> <tr> <td>AS Access Set</td><td>LV Logical View</td></tr> <tr> <td>AT Attribute</td><td>MR Maintenance Restriction</td></tr> <tr> <td>CS Conceptual Schema</td><td>PF Physical Field</td></tr> <tr> <td>DC Directory Component Description</td><td>PR Procedure</td></tr> <tr> <td>DM Domain</td><td>SC Schema</td></tr> <tr> <td>EM Edit Mask</td><td>RE Relation</td></tr> <tr> <td>ED Environment Description</td><td>RW Reserved Word</td></tr> <tr> <td>XF External Field</td><td>SK Secondary Key</td></tr> <tr> <td>FI File</td><td>SG Security Group</td></tr> <tr> <td>FK Foreign Key</td><td>TA Table</td></tr> <tr> <td>IR Internal Record</td><td>US User</td></tr> <tr> <td>KC Key Code</td><td></td></tr> </table>	AS Access Set	LV Logical View	AT Attribute	MR Maintenance Restriction	CS Conceptual Schema	PF Physical Field	DC Directory Component Description	PR Procedure	DM Domain	SC Schema	EM Edit Mask	RE Relation	ED Environment Description	RW Reserved Word	XF External Field	SK Secondary Key	FI File	SG Security Group	FK Foreign Key	TA Table	IR Internal Record	US User	KC Key Code	
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ED Environment Description	RW Reserved Word																								
XF External Field	SK Secondary Key																								
FI File	SG Security Group																								
FK Foreign Key	TA Table																								
IR Internal Record	US User																								
KC Key Code																									

entity name

Positions	7–36
Description	<i>Required.</i> Specifies the name of the entity for which text is being edited.
Format	1–30 alphanumeric characters
Considerations	

- ◆ See the appropriate category section for naming conventions.
- ◆ You do not need to enter this name if it is the same as the preceding entity name entered within the category during this run.

Input statement 2

editor command code

Positions	7–8
Description	<i>Required.</i> Specifies the function you want to perform.
Options	AD Add descriptive data
	DI Print specified lines of data
	CG Change descriptive data
	DE Print valid editor commands
	DE Delete specified lines of data
	RS Resequence lines of data

Consideration If you enter DE in this field, Directory Maintenance deletes the lines specified in the sequence fields but does not print the lines of text. If you are unsure of the sequence numbers you want to delete, select DI to print the text before deletion.

sequence 1

Positions	10–13
Description	<i>Required.</i> In combination with the Sequence2/Increment field, indicates the lines of data you want to process. These values depend on the editor command used.
Format	1–4 numeric characters
Options	See the following table.

sequence 2/increment

Positions	15–18
Description	<i>Optional.</i> In combination with the Sequence1 field, indicates the lines of data you want to process. These values depend on the editor command used.
Format	1–4 numeric characters
Options	See the following table.

Code	Sequence1	Sequence2/Increment	Processing
AD	BEG.	Number by which to increment lines (<i>optional</i>)	The text is added at the beginning of the data. If you do not specify a value for the Sequence2/Increment field, the sequence numbers begin at 100 and are incremented by 100 to 9900. If you specify a value for the Sequence2/Increment field, sequence numbers are incremented by the value of the Seq2/Increment field. If the sequence numbers exceed 9999, all lines are renumbered beginning at 1 and incremented by 1.
	END.	Number by which to increment lines	The text is added after any existing data.

Code	Sequence1	Sequence2/Increment	Processing
CG	BEG. or first sequence number to be processed	END. Or last sequence number to be processed	The text replaces the data within the range identified by the Sequence1 and Sequence2/Increment fields.
	ALL.		All existing data is deleted. Any new text is added.
DE	BEG. or first sequence number to be processed	END. Or last sequence number to be processed	The data within the range identified by the Sequence1 and Sequence2/Increment fields is deleted.
	ALL.		All existing data is deleted.
DI	BEG. or first sequence number to be processed	END. Or last sequence number to be processed	The data within the range identified by the Sequence1 and Sequence2/Increment fields is printed.
	ALL.		All existing data is printed.
RS	New starting sequence number	Number by which to increment lines of data	All lines of data are resequenced. Sequence numbers begin at the value of the Sequence1 field and are incremented by the value of the Seq2/Increment field. If the sequence numbers exceed 9999, all lines are renumbered beginning at 1 and incremented by 1.

Input statement 3

Use this statement only with the editor commands AD or CG to enter the text data.

text

Positions 1–72

Description *Required.* Contains the text information being added or changed.

Format 1–72 alphanumeric characters

Considerations

- ◆ Enter only one line of information per statement. Continuation is not allowed.
- ◆ The last statement must contain an ampersand (&) in position 1 indicating the end of data.
- ◆ A maximum of 20 text statements can be maintained for an External Field (XF) entity. Entities in other categories can have up to 9999 statements.

LONG TEXT

Use the LONG TEXT command to print the descriptive text that was entered with the LONG EDIT command and stored for an entity.

The following categories can use the LONG TEXT command. See the appropriate section for entity naming conventions.

- ◆ ACCESS SET (“[Access Set](#)” on page 167)
- ◆ ATTRIBUTE (“[Attribute](#)” on page 89)
- ◆ CONCEPTUAL SCHEMA (“[Conceptual Schema](#)” on page 110)
- ◆ DIRECTORY COMPONENT DESCRIPTION (“[Directory Component Description](#)” on page 425)
- ◆ DOMAIN (“[Domain](#)” on page 119)
- ◆ EDIT MASK (“[Edit Mask](#)” on page 430)
- ◆ ENVIRONMENT DESCRIPTION (“[Environment Description](#)” on page 239)
- ◆ EXTERNAL FIELD (“[External Field](#)” on page 182)
- ◆ FILE (“[File](#)” on page 268)
- ◆ FOREIGN KEY (“[Foreign Key](#)” on page 131)
- ◆ INTERNAL RECORD (“[Internal Record](#)” on page 317)
- ◆ KEY CODE (“[Key Code](#)” on page 327)
- ◆ LOGICAL VIEW (“[Logical View](#)” on page 206)
- ◆ PHYSICAL FIELD (“[Physical Field](#)” on page 345)
- ◆ PROCEDURE (“[Procedure](#)” on page 456)
- ◆ RELATION (“[Relation](#)” on page 142)
- ◆ RESERVED WORD (“[Reserved Word](#)” on page 435)
- ◆ SCHEMA (“[Schema](#)” on page 386)
- ◆ SECONDARY KEY (“[Secondary Key](#)” on page 401)
- ◆ SECURITY GROUP (“[Security Group](#)” on page 463)
- ◆ TABLE (“[Table](#)” on page 438)
- ◆ USER (“[User](#)” on page 471)

LT

Positions	1–2
Description	<i>Required.</i> Specifies the LONG TEXT command.

category code

Positions	4–5																						
Description	<i>Required.</i> Specifies the category of the entity you want to print.																						
Options	<table> <tr> <td>AS Access Set</td><td>KC Key Code</td></tr> <tr> <td>AT Attribute</td><td>LV Logical View</td></tr> <tr> <td>CS Conceptual Schema</td><td>PF Physical Field</td></tr> <tr> <td>DC Directory Component Description</td><td>PR Procedure</td></tr> <tr> <td>DM Domain</td><td>SC Schema</td></tr> <tr> <td>EM Edit Mask</td><td>RE Relation</td></tr> <tr> <td>ED Environment Description</td><td>RW Reserved Word</td></tr> <tr> <td>XF External Field</td><td>SK Secondary Key</td></tr> <tr> <td>FI File</td><td>SG Security Group</td></tr> <tr> <td>FK Foreign Key</td><td>TA Table</td></tr> <tr> <td>IR Internal Record</td><td>US User</td></tr> </table>	AS Access Set	KC Key Code	AT Attribute	LV Logical View	CS Conceptual Schema	PF Physical Field	DC Directory Component Description	PR Procedure	DM Domain	SC Schema	EM Edit Mask	RE Relation	ED Environment Description	RW Reserved Word	XF External Field	SK Secondary Key	FI File	SG Security Group	FK Foreign Key	TA Table	IR Internal Record	US User
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ED Environment Description	RW Reserved Word																						
XF External Field	SK Secondary Key																						
FI File	SG Security Group																						
FK Foreign Key	TA Table																						
IR Internal Record	US User																						

entity name

Positions	7–36
Description	<i>Required.</i> Specifies the name of the entity for which text will be printed.
Format	1–30 alphanumeric characters

Considerations

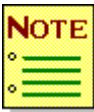
- ◆ See the appropriate category section for naming conventions.
- ◆ You do not need to enter this name if it is the same as the preceding entity name entered within the category during this run.

RENAME

Use the RENAME command to change the name of an existing entity. This command requires two input statements.

The following categories can use the RENAME command. See the appropriate section for entity naming conventions.

- ◆ ACCESS SET (“Access Set” on page 167)
- ◆ ATTRIBUTE (“Attribute” on page 89)
- ◆ BUFFER POOL (“Buffer Pool” on page 231)
- ◆ CONCEPTUAL SCHEMA (“Conceptual Schema” on page 110)
- ◆ DOMAIN (“Domain” on page 119)
- ◆ EDIT MASK (“Edit Mask” on page 430)
- ◆ ENVIRONMENT DESCRIPTION (“Environment Description” on page 239)
- ◆ EXTERNAL FIELD (“External Field” on page 182)
- ◆ FILE (“File” on page 268)
- ◆ FOREIGN KEY (“Foreign Key” on page 131)
- ◆ INTERNAL RECORD* (“Internal Record” on page 317)
- ◆ LOG GROUP (“Log Group” on page 336)
- ◆ LOGICAL VIEW (“Logical View” on page 206)
- ◆ MAINTENANCE RESTRICTION (“Maintenance Restriction” on page 449)
- ◆ PHYSICAL FIELD (“Physical Field” on page 345)
- ◆ PROCEDURE (“Procedure” on page 456)
- ◆ RELATION (“Relation” on page 142)
- ◆ SCHEMA (“Schema” on page 386)
- ◆ SECONDARY KEY (“Secondary Key” on page 401)
- ◆ SECURITY GROUP (“Security Group” on page 463)
- ◆ TABLE (“Table” on page 438)



If the Internal Record contains a Physical Field that is part of a Secondary Key structure and the SK MAINTENANCE ALLOWED field of the Secondary Key is set to N, the Internal Record cannot be renamed.

You cannot rename a BASE. Internal Record.

Input statement 1

RN

Positions	1–2
Description	<i>Required.</i> Specifies the RENAME command.

category code

Positions	4–5																						
Description	<i>Required.</i> Specifies the category of the entity you want to rename.																						
Options	<table> <tr> <td>AS Access Set</td><td>LG Logical Group</td></tr> <tr> <td>AT Attribute</td><td>LV Logical View</td></tr> <tr> <td>BP Buffer Pool</td><td>MR Maintenance Restriction</td></tr> <tr> <td>CS Conceptual Schema</td><td>PF Physical Field</td></tr> <tr> <td>DM Domain</td><td>PR Procedure</td></tr> <tr> <td>EM Edit Mask</td><td>RE Relation</td></tr> <tr> <td>ED Environment Description</td><td>SC Schema</td></tr> <tr> <td>XF External Field</td><td>SK Secondary Key</td></tr> <tr> <td>FI File</td><td>SG Security Group</td></tr> <tr> <td>FK Foreign Key</td><td>TA Table</td></tr> <tr> <td>IR Internal Record</td><td>US User</td></tr> </table>	AS Access Set	LG Logical Group	AT Attribute	LV Logical View	BP Buffer Pool	MR Maintenance Restriction	CS Conceptual Schema	PF Physical Field	DM Domain	PR Procedure	EM Edit Mask	RE Relation	ED Environment Description	SC Schema	XF External Field	SK Secondary Key	FI File	SG Security Group	FK Foreign Key	TA Table	IR Internal Record	US User
AS Access Set	LG Logical Group																						
AT Attribute	LV Logical View																						
BP Buffer Pool	MR Maintenance Restriction																						
CS Conceptual Schema	PF Physical Field																						
DM Domain	PR Procedure																						
EM Edit Mask	RE Relation																						
ED Environment Description	SC Schema																						
XF External Field	SK Secondary Key																						
FI File	SG Security Group																						
FK Foreign Key	TA Table																						
IR Internal Record	US User																						

entity name

Position	7–36
Description	<i>Required.</i> Specifies the existing entity being renamed.
Format	1–30 alphanumeric characters

Considerations

- ◆ See the appropriate category section for naming conventions.
- ◆ You do not need to enter this name if it is the same as the preceding entity name entered within the category during this run.

Input statement 2

new entity name

- Position** 7–36
- Description** *Required.* Specifies the new name of the entity.
- Format** 1–30 alphanumeric characters
- Consideration** See the appropriate category section for naming conventions.

SHORT EDIT

Use the SHORT EDIT command to maintain one line (up to 72 characters) of descriptive text for an entity. If the descriptive text for an entity exceeds 72 characters, use the LONG EDIT command (see “LONG EDIT” on page 495).

The SHORT EDIT command uses three input statements. Use the first input statement to enter the naming data. Use the second input statement to enter the text editor command specifying the function you want to perform. Use the third input statement to enter the variable data in a free format.

The following categories can use the SHORT EDIT command. See the appropriate section for entity naming conventions.

- ◆ ACCESS SET (“Access Set” on page 167)
- ◆ ATTRIBUTE (“Attribute” on page 89)
- ◆ CONCEPTUAL SCHEMA (“Conceptual Schema” on page 110)
- ◆ DIRECTORY COMPONENT DESCRIPTION (“Directory Component Description” on page 425)
- ◆ DOMAIN (“Domain” on page 119)
- ◆ EDIT MASK (“Edit Mask” on page 430)
- ◆ ENVIRONMENT DESCRIPTION (“Environment Description” on page 239)
- ◆ EXTERNAL FIELD (“External Field” on page 182)
- ◆ FILE (“File” on page 268)
- ◆ FOREIGN KEY (“Foreign Key” on page 131)
- ◆ INTERNAL RECORD (“Internal Record” on page 317)
- ◆ KEY CODE (“Key Code” on page 327)
- ◆ LOGICAL VIEW (“Logical View” on page 206)
- ◆ PHYSICAL FIELD (“Physical Field” on page 345)
- ◆ PROCEDURE (“Procedure” on page 456)
- ◆ RELATION (“Relation” on page 142)
- ◆ RESERVED WORD (“Reserved Word” on page 435)
- ◆ SCHEMA (“Schema” on page 386)
- ◆ SECONDARY KEY (“Secondary Key” on page 401)
- ◆ SECURITY GROUP (“Security Group” on page 463)
- ◆ TABLE (“Table” on page 438)
- ◆ USER (“User” on page 471)

Input statement 1

SE

Positions	1–2
Description	<i>Required.</i> Specifies the SHORT EDIT command.

category code

Positions	4–5			
Description	<i>Required.</i> Specifies the category you want to maintain.			
Options	AS	Access Set	LG	Logical Group
	AT	Attribute	LV	Logical View
	BP	Buffer Pool	MR	Maintenance Restriction
	CS	Conceptual Schema	PF	Physical Field
	DM	Domain	PR	Procedure
	EM	Edit Mask	RE	Relation
	ED	Environment Description	SC	Schema
	XF	External Field	SK	Secondary Key
	FI	File	SG	Security Group
	FK	Foreign Key	TA	Table
	IR	Internal Record	US	User

entity name

Positions	7–36
Description	<i>Required.</i> Specifies the name of the entity for which text is being edited.
Format	1–30 alphanumeric characters
Considerations	

- ◆ See the appropriate category section for naming conventions.
- ◆ You do not need to enter this name if it is the same as the preceding entity name entered within the category during this run.

Input statement 2

editor command code

Positions	7–8
Description	<i>Required.</i> Specifies the function you want to perform.
Options	AD Add descriptive data CG Change descriptive data DE Delete specified lines of data DI Print specified lines of data

Input statement 3

Use this statement only with the editor commands AD or CG to enter the short text.

text

Positions	1–72
Description	<i>Required.</i> Contains the text information being added or changed.
Format	1–72 alphanumeric characters

SHORT TEXT

Use the SHORT TEXT command to print the descriptive text entered with the SHORT EDIT command and stored for an entity.

The following categories can use the SHORT TEXT command. See the appropriate section for entity naming conventions.

- ◆ ACCESS SET (“[Access Set](#)” on page 167)
- ◆ ATTRIBUTE (“[Attribute](#)” on page 89)
- ◆ CONCEPTUAL SCHEMA (“[Conceptual Schema](#)” on page 110)
- ◆ DIRECTORY COMPONENT DESCRIPTION (“[Directory Component Description](#)” on page 425)
- ◆ DOMAIN (“[Domain](#)” on page 119)
- ◆ EDIT MASK (“[Edit Mask](#)” on page 430)
- ◆ ENVIRONMENT DESCRIPTION (“[Environment Description](#)” on page 239)
- ◆ EXTERNAL FIELD (“[External Field](#)” on page 182)
- ◆ FILE (“[File](#)” on page 268)
- ◆ FOREIGN KEY (“[Foreign Key](#)” on page 131)
- ◆ INTERNAL RECORD (“[Internal Record](#)” on page 317)
- ◆ KEY CODE (“[Key Code](#)” on page 327)
- ◆ LOGICAL VIEW (“[Logical View](#)” on page 206)
- ◆ PHYSICAL FIELD (“[Physical Field](#)” on page 345)
- ◆ PROCEDURE (“[Procedure](#)” on page 456)
- ◆ RELATION (“[Relation](#)” on page 142)
- ◆ RESERVED WORD (“[Reserved Word](#)” on page 435)
- ◆ SCHEMA (“[Schema](#)” on page 386)
- ◆ SECONDARY KEY (“[Secondary Key](#)” on page 401)
- ◆ SECURITY GROUP (“[Security Group](#)” on page 463)
- ◆ TABLE (“[Table](#)” on page 438)
- ◆ USER (“[User](#)” on page 471)

ST

Positions	1–2
Description	<i>Required.</i> Specifies the SHORT TEXT command.

category code

Positions	4–5			
Description	<i>Required.</i> Specifies the category you want to print.			
Options	AS	Access Set	KC	Key Code
	AT	Attribute	LV	Logical View
	CS	Conceptual Schema	PF	Physical Field
	DC	Directory Component Schema	PR	Procedure
	DM	Domain	RE	Relation
	EM	Edit Mask	SC	Schema
	ED	Environment Description	SK	Secondary Key
	XF	External Field	SG	Security Group
	FI	File	TA	Table
	FK	Foreign Key	US	User
	IR	Internal Record		

entity name

Positions	7–36
Description	<i>Required.</i> Specifies the name of the entity for which short text will be printed.
Format	1–30 alphanumeric characters

Considerations

- ◆ See the appropriate category section for naming conventions.
- ◆ You do not need to enter this name if it is the same as the preceding entity name entered within the category during this run.

VARIABLE DISPLAY

Use the VARIABLE DISPLAY command to print the data added with the VARIABLE EDIT command and stored for an entity.

The following categories can use the VARIABLE DISPLAY command. See the appropriate section for entity naming conventions.

- ◆ ACCESS SET (“Access Set” on page 167)
- ◆ PROCEDURE (“Procedure” on page 456)
- ◆ TABLE (“Table” on page 438)
- ◆ USER (“User” on page 471)

VD

Positions	1–2
Description	<i>Required.</i> Specifies the VARIABLE DISPLAY command.

category code

Positions	4–5
Description	<i>Required.</i> Specifies the category of the entity you want to print.
Options	AS Access Set TA Table PR Procedure US User

entity name

Positions	7–36
Description	<i>Required.</i> Specifies the name of the entity for which variable data will be printed.
Format	1–30 alphanumeric characters
Considerations	

- ◆ See the appropriate category section for naming conventions.
- ◆ You do not need to enter this name if it is the same as the preceding entity name entered within the category during this run.

A

Command statement layouts

Use this appendix to determine the fields on each command statement. The information is presented alphabetically by category and includes the position numbers and field name for each input statement.



Any field description that contains an asterisk (*) is not applicable to this release.

Access set

ADD/CHANGE

1-2	4-5	7-36	
AD	AS	access set	
CG			
	7		
	type		

CHECK/DELETE

1-2	4-5	7-36	
CK	AS	access set	
DE			

COPY

1-2	4-5	7-36	
CO	AS	source access set	
	7-36	38-67	69
	target schema	target access set	relate lv option

RELATE/REMOVE

1-2	4-5	7-36	
RL	AS	access set	
RM			
	7-8	10-39	
	LV	logical view	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	AS	access set	
	7-8		
	LV		

VARIABLE EDIT

1-2	4-5	7-36	
VE	AS	access set	
	7-8	10-13	15-18
	editor	seq. 1	seq. 2
	code		
1-72			
access definition statements			

Attribute

ADD/CHANGE

1-2	4-5	7-36					
AD	AT	attribute					
CG		7-36					
		domain					
						38	40-69
						primary	position (ADD only)
						key	
		7-36					
		function					
						38-67	
						unit	
	7	9-13	15-16	18	20-24	26	28-57
	data	external	no.	signed	edited	t/e	translate/edit
	format	length	dec.	option	length	switch	name
		7-36					
		print heading					
						38-45	
						data trans.	exit

DELETE

1-2	4-5	7-36					
DE	AT	attribute					

RELATE/REMOVE

1-2	4-5	7-36					
RL	AT	attribute					
RM							

ATTRIBUTE/EXTERNAL FIELDS

	7-8	10-39		41-70	
	XF	qual. Schema		external field	

ATTRIBUTE/FOREIGN KEYS

	7-8	10-39			
	FK	foreign key			

STRUCTURE DISPLAY

1-2	4-5	7-36					
SD	AT	attribute					
		7-8					
		XF					
		FK					

Buffer Pool

ADD/CHANGE

1-2	4-5	7-36			
AD	BP	buffer pool			
CG					
	7-11	13-17	19-23	25-27	
	direct buffer count	number serial buffers	number serial threads	minimum % direct buffers	

DELETE

1-2	4-5	7-36			
DE	BP	buffer pool			

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	BP	buffer pool	
		7-8	
	FI		

Conceptual Schema

ADD/DELETE

1-2	4-5	7-36	
AD	CS	conceptual schema	
DE			

CHECK

1-2	4-5	7-36	
CK	CS	conceptual schema	
	7	9	
	all	incon.	
	rel	Rel	

COPY

1-2	4-5	7-36	
CO	CS	source conceptual schema	
		7-36	
		target conceptual schema	

RELATE/REMOVE

1-2	4-5	7-36	
RL	CS	conceptual schema	
RM			
	7-8	10-39	
	SC	related schema	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	CS	conceptual schema	
	7-8		
	RE		
	SC		

Directory Component Description

ADD/CHANGE

1-2	4-5	7-36									
AD	DC	directory component description									
CG											
	7-9	11	13	15-19	21	23-52	54	56			
	*	console opt.	Security console	*	pass. check	dba id	ck.ver. msg.	Generation maintenance			
	7-36					38-69					
	directory name					installation name					

Domain

ADD/CHANGE

1-2	4-5	7-36							
AD	DM	domain							
CG									
	7	9-38				40-69			
	data format function				unit				
	7-11	13-14	16	18	20-51	53			
	length	no. dec.	signed option	retr. validation option	default value	validation option			
	7-38				40-71				
	validation minimum				validation maximum				
	7-36				38-45				
	validation table				validation exit				
	7	9-40							
	nulls allowed option	null value							

DELETE

1-2	4-5	7-36					
DE	DM	domain					

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	DM	domain	
	7-8		
	AT		

Edit Mask

ADD/CHANGE/DELETE

1-2	4-5	7-36	
AD	EM	edit mask	
CG			
DE			

ADD/CHANGE only

	7-72
	mask definition

Environment Description

ADD/CHANGE

1-2	4-5	7-36										
AD	ED	environment description										
CG												
	7-11	13-17	19-23	25-35	37-41	43-46	48	50	52	54	56	
	max. conn. interfaces	max. conn. threads	max. tasks	PDM storage	max. held records	log opts.	task log	end log	openx	PDM console	stat. Ind.	
									58-63 access mode	65-68 directory access method		
	7-14	16-23	25-32	34-41	43-50	52-59	61-68					
	func. input exit	open exit	close exit	read exit	write exit	check exit	shutdown password					
	7-13	15-21			39-46	48-55						
	batch delay	tp-monitor delay			log. write exit	new vol. exit						
	7-36			38-45	47-51	53-56			58-60			
	*			*	maximum read locks	interface scan interval		memory cleanup threshold				

COPY

1-2	4-5	7-36									
CO	ED	source environment description									
		7-36				38-67					
		target schema					target environment description				

DELETE

1-2	4-5	7-36									
DE	ED	environment description									

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE

1-2	4-5	7-36									
RC	ED	environment description									
RD											
RL											
RM											

Environment Description/File

		7-8	10-39								
		FI	file								

RELATE/RELATIONSHIP CHANGE only

	7-10	12-15	17	19	21	23	
	open	buffer	task	function	after	before	
	mode	pool	log	log	image	image	
			option	option	log	log	

Environment Description/Logical View

	7-8	10-39	
	LV	logical view	

RELATE/RELATIONSHIP CHANGE only

	7-10	
	open mode	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	ED	environment description	
		7-8	
		BP	
		FI	
		LG	
		LV	

External Field

ADD/CHANGE

1-2	4-5	7-36									
AD	XF	external field									
CG											
		7	9-38					40-69			
		data format	function					unit			
		7-11	13-14	16	18-22	24	26-55			57-60	
		ext. length	no. decimal	sign opt.	Edited length	e/t switch	edit/translate name			record code	
		7-36	38-45								
		print heading	data trans. Exit								
		7	9-38			40-44		46-53			
		relate to pf	file			internal record		related physical field			
		7	9-36					40-69			
		relate to relation at						attribute			

DELETE

1-2	4-5	7-36					
DE	XF	external field					

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP
DISPLAY/REMOVE

1-2	4-5	7-36	
RC	XF	external field	
RD			
RL			
RM			

External Field/Attribute

	7-8	10-39	41-70	
	AT	qual. relation	attribute	

External Field/Logical View

	7-8	10-39	7-36	36-53	55-58	60	
	LV	Logical view	position for relate	*	*	*	

Relation/Change

	7-22	24-27	29	
	*	*	*	

External Field/Physical Field

	7-8	10-39	41-70	
	PF	qual. File	qual. internal record	
	7-36			
	physical field			

RELATE only

	7-36	
	position for relate	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	XF	external field	
	7-8		
	AT		
	LV		
	PF		

File

ADD/CHANGE

1-2	4-5	7-36									
AD	FI	file									
CG											
		7-14	16-59								
		ddname data set name									
		7-13	15-18	20-23	25-27	29-35	37-46	48-52	54-60	62-68	
		file type	access method	device type	device assign.	log.rec length	total log. rec.	total tracks	records per block	blocks per track	
		7-13	15-24	26-33	35-64				66	68	70
		VSAM control internal	total VSAM control intervals	*	*				coded recs	vse ind.	old file

ADD

	7	9-16	18-25	27	29-36	38-45	47	49-56	58-65	67
	*	*	*	*	*	*	*	*	*	*
	7-14	16-23	25	27	29-45					
	*	*	DL/I root ind.	DL/I var. length	DL/I parent segment					

CHANGE

	7	9	11-27								
	DL/I root ind.	DL/I var. length ind.	DL/I parent segment								

CHECK

1-2	4-5	7-36									
CK	FI	file									
		7	9								
		all ir and sk	inconsistent ir and sk								

COPY

1-2	4-5	7-36									
CO	FI	file									
		7-36							38		
		target schema							copy xf		

DELETE

1-2	4-5	7-36	
DE	FI	file	
	7	9	
remove lv delete xf			

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP
DISPLAY/REMOVE

1-2	4-5	7-36	
RC	FI	file/index file	
RD			
RL			
RM			

File/Environment Description

	7-8	10-39	
ED	environment description		

RELATE/RELATIONSHIP CHANGE only

	7-10	12-15	17	19	21	23	
	open	buffer	task	function	after	before	
	mode	pool	log	log	image	image	
					log	log	

File/Secondary Key

	7-8	10-39	41-70	
SK	QUAL. database file		secondary key	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	FI	file	
	7-8		
	BP		
	IR		
	KC		
	PF		
	SK		
	XF		

Foreign Key

ADD/CHANGE

1-2	4-5	7-36				
AD	FK	foreign key				
CG						
		7-36	38-57	59	61	
		primary key relation	foreign key type	cluster option	chain option	

DELETE

1-2	4-5	7-36				
DE	FK	foreign key				

RELATE/REMOVE

1-2	4-5	7-36	
RL	FK	foreign key	
RM			
		7-8	10-39
		AT	related attribute

STRUCTURE DISPLAY

1-2	4-5	7-36				
SD	FK	foreign key				
		7-8				
		AT				

Internal Record

ADD/CHANGE

1-2	4-5	7-36	
AD	IR	internal record	
CG			

ADD/CHANGE

	7	9-16	18-25	27	29-36	38-45	47	49-56	58-65	
	*	*	*	*	*	*	*	*	*	*
	7	9-16	18-25							
	*	*	*							

CHECK/DELETE

1-2	4-5	7-36	
CK	IR	internal record	
DE			

DELETE only

	7	9	
	remove	delete	
	lv	xf	

RELATE/REMOVE

1-2	4-5	7-36	
RL	IR	internal record	
RM			
	7-8	10-39	
	RE	relation	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	IR	internal record	
	7-8		
	PF		
	RE		
	XF		

Key Code

ADD/DELETE

1-2	4-5	7-36	
AD	KC	key code	
DE			

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE

1-2	4-5	7-36	
RC	KC	key code	
RD			
RL			
RM			
	7-8	10-39	
	PF	physical field	

RELATE/RELATIONSHIP CHANGE only

	7-36	38	
	position	sequence field type	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	KC	key code	
	7-8		
	PF		
	XF		

Log Group

ADD/CHANGE

1-2	4-5	7-36				
AD	LG	log group				
CG						
	7	9				
	log wrap		log			
			synchron.			
	7-10	12-21	23-26	28-37	39-42	44-53
	first log	max vol.	second log	max vol.	third log	max vol.
	file	blk. no.	file	blk. no.	file	blk. no.
		55-58	60-69			
		fourth log	max. vol.			
		file	blk. no.			

DELETE

1-2	4-5	7-36				
DE	LG	log group				

Logical View

ADD/CHANGE

1-2	4-5	7-36	
AD	LV	logical view	
CG			

ADD/CHANGE

	7	9	11	13	15	17	19-48	
	*	*	*	*	*	*	*	

CHECK/DELETE

1-2	4-5	7-36	
CK	LV	logical view	
DE			

DELETE only

	7	
	delete	
	as	

COPY

1-2	4-5	7-36	
CO	LV	source logical view	
		7-36	38-67
		target schema	target logical view
	7	9	11
	relate	relate	copy
	users	as	xf

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP
DISPLAY/REMOVE

1-2	4-5	7-36	
RC	LV	logical view	
RD			
RL			
RM			
	7-8	10-39	
	AS	access set	
	ED	environment description	
	US	user	
	XF	external field	

RELATE/RELATIONSHIP CHANGE only

Logical View/Environment Description

	7-10	
	open mode	

RELATE/RELATIONSHIP CHANGE only

Logical View/External Field

	7-36	38-53	55-58	60	
	position for relate	*	*	*	

RELATE/RELATIONSHIP CHANGE only

	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	LV	logical view	
	7-8		
	AS		
	ED		
	US		
	XF		

Maintenance Restriction

ADD/CHANGE

1-2	4-5	7-14				
AD	MR	maintenance restriction				
CG						
		7-12	14-15	17-18	20-21	
		permit/ deny option	permit/ deny category code	permit/ deny command code	permit/ deny subcommand/subcategory code	
		7-8	10-39		41-70	
		naming data category code	entity name1		entity name2	
		7-36			38-67	
		entity name3			entity name4	

DELETE

1-2	4-5	7-14	
DE	MR	maintenance restriction	

Physical Field

ADD

1-2	4-5	7-36											
AD	PF	physical field											
		7-14	16-23		25-54								
		parent		position		function							
		7-36			38	40-44	46-47	49	51	53-60	62		
		unit			data format	field length	no. of dec.	signed option	retr. valida- tion option	key refer- back	link type		
		7-14	16	18-49				51					
		*	sequence field type	default value				validate option					
		7-38					40-71						
		validation minimum					validation maximum						
		7-36					38-45						
		validation table					validation exit						
		7	9-40			42							
		nulls allowed	null value			DL/I DBD field indicator							

CHANGE

1-2	4-5	7-36											
CG	PF	physical field											
		7-36							38-67				
		function							unit				
		7	9-13	15-16	18	20	22-29	31	33-40	42			
		data format	field length	no. of dec.	signed option	retr. validation option	key referback	linkpath type	*	sequence field type			
		7-38							40				
		default value							validate option				
		7-38							40-71				
		validation minimum							validation maximum				
		7-36							38-45			47	
		validation table name							validation exit			DL/I field	DBD indicator
		7											
		7	9-40										
		nulls allowed	null value										

DELETE

1-2	4-5	7-36									
DE	PF	physical field									
		7	9								
		remove lv	delete xf								

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP
DISPLAY/REMOVE

1-2	4-5	7-36	
RC	PF	physical field	
RD			
RL			
RM			

Physical Field/External Fields

	7-8	10-39	
	XF	external field	

Physical Field/Key Code

	7-8	10-39	41-70
	KC	secondary key	key code
	7-36	38	
	position	*	

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	PF	physical field	
	7-8		
	KCPF		
	XF		

Procedure

ADD/CHANGE

1-2	4-5	7-36	
AD	PR	procedure	
CG			
	7-16	18	
	language	type	

COPY

1-2	4-5	7-36	
CO	PR	source procedure	
	7-36	38-67	
	target user	target procedure	

DELETE

1-2	4-5	7-36	
DE	PR	procedure	

Relation

ADD/CHANGE

1-2	4-5	7-36						
AD	RE	relation						
CG								
	7-16	18-37			39	41	43-72	
	no. of tuples	relation type			subtype	extension	file name	
	7	9-16	18-61					
	ordered primary key	ddname	data set name					

CHECK/DELETE

1-2	4-5	7-36	
CK	RE	relation	
DE			

COPY

1-2	4-5	7-36				
CO	RE	source relation				
	7-36		38-67			
	target conceptual schema		target relation			

RELATE/RELATIONSHIP CHANGE/RELATIONSHIP DISPLAY/REMOVE

1-2	4-5	7-36	
RC	RE	relation	
RD			
RL			
RM			

RELATION/INTERNAL RECORD

	7-8	10-39	41-70	
	IR	schema	file	
	7-36			
	internal record			

RELATION/SCHEMA

	7-8	10-39	
SC	schema		

RELATION/USER

	7-8	10-39	
	US	user	

RELATION/RELATIONSHIP CHANGE only

	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

STRUCTURE

1-2	4-5	7-36	
SD	RE	relation	
	7-8		
	ATXF		
	FK		
	IR		
	PK		
	SCUS		

Reserved Word

ADD/DELETE

1-2	4-5	7-36	
AD	RW	reserved word	
DE			

Schema

ADD/CHANGE

1-2	4-5	7-36	
AD	SC	schema	
CG			
	7-14		
	*		

CHECK

1-2	4-5	7-36	
CK	SC	schema	
	7	9	11
	all physical	incon. physical	all logical
			13
			incon. logical

COPY

1-2	4-5	7-36	
CO	SC	source schema	
	7-36	38-67	
	target schema	relate users	

DELETE

1-2	4-5	7-36	
DE	SC	schema	

RELATE/REMOVE

1-2	4-5	7-36	
RL	SC	schema	
RM			
	7-8	10-39	
	CS	conceptual schema	
	RE	relation	

SPECIAL FUNCTION

1-2	4-5	7-14	
SF	SC	schema	
	7		
	active		
	schema option		

STRUCTURE DISPLAY

1-2	4-5	7-36	
SD	SC	schema	
	7-8		
	AS	LV	
	CS	RE	
	ED	XF	
	FI		

Secondary Key

ADD/CHANGE

1-2	4-5	7-36										
AD	SK	secondary key										
CG												
		7-8	11-18	20-21	23	25	27	29-36	38-43	45	47	
		maint.	damage	load	SK	eligible	unique-	file	record	data	primary	
		Density	control	density	maint.	to	ness	record	pointer	type	SK	
					allowed	RDM	option	pointer	ordering	sorting	indicator	
								option				

CHECK/DELETE

1-2	4-5	7-36										
CK	SK	secondary key										
DE												

COPY

1-2	4-5	7-36										
CO	SK	source secondary key										
		7-36										
		target schema										

RELATE/REMOVE

1-2	4-5	7-36										
RL	SK	secondary key										
RM												
		7-8	10-39									
		FI	index file									

STRUCTURE DISPLAY

1-2	4-5	7-36										
SD	SK	secondary key										
		7-8										
		FI										
		KC										
		PF										
		XF										

Security Group

ADD/DELETE

1-2	4-5	7-36	
AD	SG	security group	
DE			

COPY

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Unit field values

Use this appendix when you add or change the Unit field for an Attribute, a Domain, an External Field, or a Physical Field.

List of Unit field values

The following table lists the values you can enter in the Unit field on Input Statement 2 for each function. You can use any of the values shown in the Valid Unit Options column with the associated function. Whatever value you enter, only the values shown in the Printed or Displayed Unit Value column are printed or displayed. Thus, you can enter an abbreviated version of the value and the full, standard value is returned.

The table lists the unit values alphabetically within each function:

Function	Printed or displayed unit value	Valid unit options
AREA	ACRE	
	ARE	A
	CENTARE	CA
	HECTARE	HA
	SQUARE-CENTIMETER	CENTIMETER**2 CM**2 SQ-CENTIMETER SQ-CM
	SQUARE-CUBIT	CUBIT**2 SQ-CUBIT
	SQUARE-FOOT	FOOT**2 FT**2 SQ-FOOT SQ-FT
	SQUARE-INCH	INCH**2 IN**2 SQ-IN SQ-INCH
	SQUARE-KILOMETER	KILOMETER**2 KM**2 SQ-KILOMETER SQ-KM
	SQUARE-MILE	MILE**2 MI**2 SQ-MI SQ-MILE
	SQUARE-ROD	RD**2 ROD**2 SQ-RD SQ-ROD
	SQUARE-YARD	SQ-YARD SQ-YD YARD**2 YD**2

Function	Printed or displayed unit value	Valid unit options
DATE	AMERICAN	MDY MM/DD/YY
	EUROPEAN	DMY DD/MM/YY
	GREGORIAN	
	JULIAN	
DISTANCE	CENTIMETER	CM
	CUBIT	
	DECIMETER	DM
	DEKAMETER	DAM
	FOOT	FT
	FURLONG	
	HECTOMETER	HM
	INCH	IN
	KILOMETER	KM
	METER	M
	MILE	MI
	MILLIMETER	MM
	MYRIAMETER	MYM
	ROD	RD
	YARD	YD
MONEY	AUSTRALS	
	BAHTS	
	BOLIVARS	
	CRUZEIROS	
	DINARS	
	DIRHAMS	
	DOLLARS	
	DRACHMAS	
	ESCUDOS	
	FRANCS	
	GUILDERS	
	KRONER	

Function	Printed or displayed unit value	Valid unit options
MONEY (<i>cont.</i>)	KRONOR	
	LIRAS	
	MARKKAA	
	MARKS	
	PESETAS	
	PESOS	
	POUNDS	
	PUNTS	
	RAND	
	RINGGITS	
	RIYALS	
	RUPEES	
	RUPIAHS	
	SCHILLINGS	
	SHEKELS	
	SHILLINGS	
	SOLES	
	SUCRES	
	WON	
	YEN	
	YUAN	
PRESSURE	GRAMS-PER-SQUARE-CENTIMETER	G/CM**2 G/SQ-CM GM/CM**2 GM/SQ-CM
	KILOGRAMS-PER-CENTARE	KG/CA
	POUNDS-PER-SQUARE-FOOT	LBS/FT**2 LBS/SQ-FT
	POUNDS-PER-SQUARE-INCH	LBS/IN**2 LBS/SQ-IN
TEMPERATURE TEMP	CELSIUS	C CENTIGRADE
	FAHRENHEIT	F
	KELVIN	K
	TEMP	

Function	Printed or displayed unit value	Valid unit options
TIME	DAYS	
	FORMATTED	
	FORTNIGHT	
	HOURS	HRS
	MINUTES	MINS
	MONTHS	MOS
	SECONDS	SECS
	WEEKS	WKS
	YEARS	YRS
VELOCITY	CENTIMETERS-PER-SECOND	CMPS
	FEET-PER-SECOND	FPS
	INCHES-PER-SECOND	IPS
	KILOMETERS-PER-HOUR	KPH
	KNOT	
	METERS-PER-SECOND	MPS
	MILES-PER-HOUR	MPH
	MILLIMETERS-PER-SECOND	MMPS
	YARDS-PER-SECOND	YDPS
VOLUME	BI-BUSHEL	BI-BU
	BI-FLUIDOUNCE	BI-FL-OZ
	BI-GILL	BI-GI
	BI-FLUIDRAM	BI-FL-DR
	BI-GALLON	BI-GAL
	BI-MINIM	BI-MIN
	BI-PECK	BI-PK
	BI-PINT	BI-PT
	BI-QUART	BI-QT
	BUSHEL	BU US-BU US-BUSHEL
	CENTILITER	CL
	CUBIC-CENTIMETER	CC CU-CM CUBIC-CM CU-CENTIMETER
	CUBIC-CUBIT	CU-CUBIT

Function	Printed or displayed unit value	Valid unit options
VOLUME (<i>cont.</i>)	CUBIC-FOOT	CU-FT CU-FOOT CUBIC-FT
	CUBIC-INCH	CU-IN CU-INCH CUBIC-IN
	CUBIC-METER	CU-M CU-METER CUBIC-M
	CUBIC-YARD	CU-YD CU-YARD CUBIC-YD
	DECILITER	DL
	DECISTERE	DS
	DEKALITER	DAL
	DEKASTERE	DAS
	DRY-PINT	DRY-PT US-DRY-PT US-DRY-PINT
	DRY-QUART	DRY-QT US-DRY-QT US-DRY-QUART
	FLUIDOUNCE	FL-OZ US-FL-OZ US-FLUIDOUNCE
	FLUIDRAM	FL-DR US-FL-DR US-FLUIDRAM
	GALLON	GAL US-GAL US-GALLON

Function	Printed or displayed unit value	Valid unit options
VOLUME (<i>cont.</i>)	GILL	GI US-GI US-GILL
	HECTOLITER	HL
	KILOLITER	KL
	LITER	L
	MILLILITER	ML
	MINIM	MIN US-MIN US-MINIM
	PECK	PK US-PK US-PECK
	PINT	PT LIQUID-PINT LIQUID-PT US-PT US-PINT US-LIQUID-PT US-LIQUID-PINT
	QUART	QT LIQUID-QT LIQUID-QUART US-QT US-QUART US-LIQUID-QT US-LIQUID-QUART
	STERE	S
WEIGHT	AP-DRAM	AP-DR
	AP-GRAIN	AP-GR
	AP-OUNCE	AP-OZ
	AP-POUND	AP-LB
	CENTIGRAM	CG

Function	Printed or displayed unit value	Valid unit options
WEIGHT (<i>cont.</i>)	DECIGRAM	DG
	DEKAGRAM	DAK
	DRAM	DR AV-DR
	GRAIN	GR
	GRAM	G GM
	HECTOGRAM	HG
	KILOGRAM	KG
	LONG-HUNDREDWEIGHT	LONG-CWT
	LONG-TON	
	METRIC-TON	MT
	MILLIGRAM	MG
	OUNCE	OZ AV-OZ
	PENNYWEIGHT	PWT DWT
	POUND	LB AV-LB
	QUINTAL	Q
	SCRUPLE	AP-S AP-SCRUPLE
	SHORT-HUNDREDWEIGHT	SHORT-CWT
	STONE	
	TON	SHORT-TON
	TROY-GRAIN	T-GR
	TROY-OUNCE	T-OZ
	TROY-POUND	T-LB

C

Supplied default values

During installation, the system loads default Directory entities onto the Directory. The system uses the CSIDEFSC schema to load external and internal schema data entities and the CSI-DEFAULT-CS conceptual schema to load conceptual schema data entities. Default values are entered for entities in these categories:

- ◆ ACCESS SET
- ◆ FILE
- ◆ PHYSICAL FIELD
- ◆ ATTRIBUTE
- ◆ FOREIGN KEY
- ◆ PROCEDURE
- ◆ BUFFER POOL
- ◆ INTERNAL RECORD
- ◆ RELATION
- ◆ DOMAIN
- ◆ LOG GROUP
- ◆ SECONDARY KEY
- ◆ ENVIRONMENT DESCRIPTION
- ◆ LOGICAL VIEW
- ◆ USER
- ◆ EXTERNAL FIELD
- ◆ MAINTENANCE RESTRICTION

In addition to loading the default values, the system also establishes a relationship between the CSIDEFSC schema and the CSI-DEFAULT-CS conceptual schema.

You can use Directory Maintenance to change the supplied defaults or to establish additional defaults at any time. The values that you enter will replace any previous or supplied values. The following sections present the supplied default values for each category in alphabetical sequence. In addition to default attribute values, some categories also have default relationship data values. All attributes are listed in the sequence in which you enter them. Each section also includes the naming data required to access the default entity.

Access Set defaults

To change the supplied defaults for Access Set entities, enter the following naming data:

```
Schema: CSIDEFSC
Access Set: CSI-DEFAULT-AS
```

The supplied default is:

Attribute	Default value
Access Set Type	RDM FORMAT

Attribute defaults

To change the supplied defaults for Attribute entities, enter the following naming data:

```
Conceptual Schema: CSI-DEFAULT-CS
Relation: CSI-DEFAULT-RE
Attribute: CSI-DEFAULT-AT
```

The supplied defaults are:

Attribute	Default value
Primary Key	N
External Length	0
Number Decimal Places	0
Length of Edited Field	0

Buffer Pool defaults

To change the supplied defaults for Buffer Pool entities, enter the following naming data:

```
Schema: CSIDEFSC
Environment Description: CSIDEFED
Buffer Pool: CDBP
```

The supplied defaults are:

Attribute	Default value
Buffer Size	0
Direct Buffer Count	2
Serial Buffer Count	0
Serial Thread Count	0

Domain defaults

To change the supplied defaults for Domain entities, enter the following naming data:

```
Domain: CSI-DEFAULT-DM
```

The supplied defaults are:

Attribute	Default value
Function	STRING
Data Format	CHARACTER
Length	1
Number Decimal Places	0

Environment Description defaults

To change the supplied defaults for Environment Description entities, enter the following naming data:

```
Schema: CSIDEFSC
Environment Description: CSIDEFED
```

Default values are supplied for Environment Description entity attributes and relationship data.

Environment Description attribute defaults

The supplied attribute defaults are:

Attribute	Default value
Max. Connected Interfaces	1
Max. Connected Threads	15
Max. Signed On Tasks	15
PDM Storage Allocation	200K
Max. Held Records	1000
Log Options	NNNN
Task Log Option	YES
End Log Option	F (force end-of-volume)
Openx Option	P (process)
PDM Console Option	YES
Statistics Indicator	NO
Access Mode	UPDATE
Directory Access Method	SUPD
Batch Delay Time	60
TP-Monitor Delay Time	5
Shutdown Password	**NONE**
Interface Scan Interval	300
Memory Cleanup Threshold	90

Environment Description relationship data defaults

The supplied defaults for Environment Description-to-File relationship data are:

Attribute	Default value
Open Mode	SUPD
Task Log	Y
Function Log	Y
After Image Log	Y
Before Image Log	Y

The supplied default for Environment Description-to-Logical View relationship data is:

Attribute	Default value
Open Mode	READ

External Field defaults

To change the supplied defaults for External Field entities, enter the following naming data:

```
Schema: CSIDEFSC
External Field: CSI-DEFAULT-XF
```

Default values are supplied for External Field entity attributes and relationship data.

External Field attribute defaults

The supplied attribute defaults are:

Attribute	Default value
External Length	0
Number Decimal Places	0
Length of Edited Field	0
Record Code	ALL.

External Field relationship data defaults

The supplied defaults for External Field-to-Logical View relationship data are:

Attribute	Default value
Record Code	ALL.
Control Key Indicator	N

File defaults

To change the supplied defaults for File entities, enter the following naming data:

```
Schema: CSIDEFSC
File: CDFI
```

Default values are supplied for File entity attributes and relationship data.

File attribute defaults

The supplied attribute defaults are:

Attribute	Default value
File Type	Primary
File Access Method	BDAM
File Device Type	3350
Logical Record Length	21
Total Logical Records	1000
Total Tracks	0
Records Per Block/CI	0
Blocks Per Track	3
VSAM Control Interval	0
Total VSAM Control Interval	0
Coded Record Indicator	N
DOS Indicator	N
Old File Indicator	N

File relationship data defaults

The supplied default for File-to-Environment Description relationship data is:

Attribute	Default value
Open Mode	SUPD

Foreign Key defaults

To change the supplied defaults for Foreign Key entities, enter the following naming data:

```
Conceptual Schema:  CSI-DEFAULT-CS
Relation:  CSI-DEFAULT-RE
Foreign Key:  CSI-DEFAULT-FK
```

The supplied defaults are:

Attribute	Default value
Foreign Key Type	Reference
Foreign Key Option	Y

Internal Record defaults

To change the supplied defaults for Internal Record entities, enter the following naming data:

```
Schema:  CSIDEFSC
File:  CDFI
Internal Record:  BASE.
```

The supplied defaults are:

Attribute	Default value
Get Valid	Y
Replace Valid	N
Insert Valid	N
Delete Valid	N

Log Group defaults

To change the supplied defaults for Log Group entities, enter the following naming data:

Schema: CSIDEFSC

Environment Description: CSIDEFED

Log Group: CSIDEFLG

The supplied defaults are:

Attribute	Default value
Log Wrap Option	N
Logging Synch Option	Y
LG File1 VOL MX	0
LG File2 VOL MX	0
LG File3 VOL MX	0
LG File4 VOL MX	0

Logical View defaults

To change the supplied defaults for Logical View entities, enter the following naming data:

```
Schema: CSIDEFSC
Logical View: CSI-DEFAULT-LV
```

Default values are supplied for Logical View entity attributes and relationship data.

Logical View attribute defaults

The supplied attribute defaults are:

Attribute	Default value
Public View Indicator	N
Online Query Indicator	Y
Batch Query Indicator	Y
Comp. Retrieval Indicator	N
Generalized Updates Indicator	N
RDM Indicator	N

Logical View relationship data defaults

The supplied default for Logical View-to-Environment Description relationship data is:

Attribute	Default value
Open Mode	READ

The supplied defaults for Logical View-to-External Field relationship data are:

Attribute	Default value
Record Code	ALL.
Control Key Indicator	N

The supplied defaults for Logical View-to-User relationship data are:

Attribute	Default value
Batch Delete Option	N
Online Delete Option	Y
Batch Save Option	N
Online Save Option	Y
Batch Define Queries	N
Online Define Queries	Y
Batch Execute Queries	N
Online Execute Queries	Y
Online Submit Option	N
Define Comp. Retrieval	N
Execute Comp. Retrieval	N
Define Generalized Updates	N
Execute Generalized Updates	N
Define RDM Application	N
Execute RDM Application	N

Maintenance Restriction defaults

To change the supplied defaults for Maintenance Restriction entities, enter the following naming data:

```
Security Group:  CSIDEFSG
Maintenance Restriction:  CSIDEFMR
```

The supplied defaults are:

Attribute	Default value
Permit/Deny Option	DENY
Category Code	SG

When you add a new user, the default Security Group is CSISG001. DENYMR, DENYSG, and DENYUS, the three Maintenance Restrictions for this Security Group, deny the user access to the Maintenance Restriction, Security Group, and User categories, respectively. To change the Maintenance Restrictions for Security Group CSISG001, enter the Security Group name CSISG001 and the appropriate Maintenance Restriction name.

Physical Field defaults

To change the supplied defaults for Physical Field entities, enter the following naming data:

```
Schema:  CSIDEFSC
File:    CDFI
Internal Record:  BASE.
Physical Field:  CSIDEFPF
```

The supplied defaults are:

Attribute	Default value
Function	STRING
Data Format	CHARACTER
Physical Field Length	1
Number Decimal Places	0
Signed Option	N
Required Field	N
Linkpath Type	P
Sequence Field Type	A

Procedure defaults

To change the supplied defaults for Procedure entities, enter the following naming data:

```
User:  CSI-DEFAULT-US
Procedure:  CSI-DEFAULT-PR
```

The supplied defaults are:

Attribute	Default value
Language	COBOL
Procedure Type	L

Relation defaults

To change the supplied defaults for Relation entities, enter the following naming data:

```
Conceptual Schema: CSI-DEFAULT-CS
Relation: CSI-DEFAULT-RE
```

Default values are supplied for Relation entity attributes and relationship data.

Relation attribute defaults

The supplied attribute defaults are:

Attribute	Default value
Relation Type	INDEPENDENT
Number of Tuples	10000

Relation relationship data defaults

The supplied defaults for Relation-to-User relationship data are:

Attribute	Default value
Batch Delete Option	N
Online Delete Option	Y
Batch Save Option	N
Online Save Option	Y
Batch Define Queries	N
Online Define Queries	Y
Batch Execute Queries	N
Online Execute Queries	Y
Online Submit Option	N
Define Comprehensive Retrieval	N
Execute Comprehensive Retrieval	N
Define Generalized Updates	N
Execute Generalized Updates	N
Define RDM Application	N
Execute RDM Application	N

Secondary Key defaults

To change the supplied defaults for Secondary Key entities, enter the following naming data:

```
Schema:  CSIDEFSC
File:    CDFI
Secondary Key:  CDFISK00
```

The supplied defaults are:

Attribute	Default value
PDM Maintenance Density	50
Damage SK Action	ABEND
Load Density	75
SK Maintenance Allowed	Y
Eligible To RDM	Y
Uniqueness Option	N
File Record Pointer	DIRECT
Record Pointer Ordering	SORTED
Data Type Sorting	N
Primary Secondary Key	N

Security Group defaults

The default Security Group naming data is:

```
Security Group:  CSIDEFSG
```

The Security Group that is related to every new User is:

```
Security Group:  CSISG001
```

There are no supplied Security Group defaults.

User defaults

To change the supplied defaults for User entities, enter the following naming data:

User: CSI-DEFAULT-US

Default values are supplied for User entity attributes and relationship data.

User attribute defaults

The supplied attribute defaults are:

Attribute	Default value
DBA Option	NO
Language	ENGLISH

User relationship data defaults

The supplied defaults for User-to-Logical View and User-to-Relation relationship data are:

Attribute	Default value
Batch Delete Option	N
Online Delete Option	Y
Batch Save Option	N
Online Save Option	Y
Batch Define Queries	N
Online Define Queries	Y
Batch Execute Queries	N
Online Execute Queries	Y
Online Submit Option	N
Define Comprehensive Retrieval	N
Execute Comprehensive Retrieval	N
Define Generalized Updates	N
Execute Generalized Updates	N
Define RDM Application	N
Execute RDM Application	N
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